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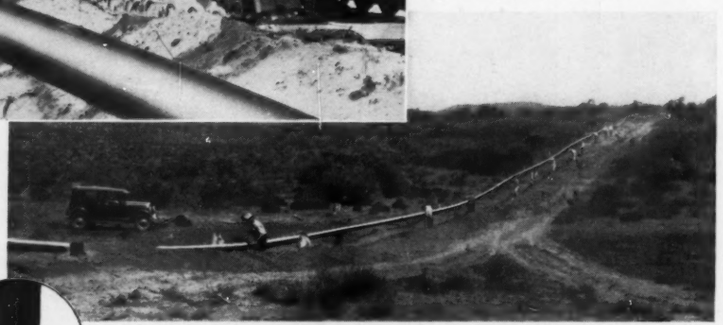
Below—*Typical of the hilly country through which the Santa Maria Gas line passes—demanding a high degree of flexibility in the pipe.*



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February, 1933. Volume IX, Number 2. Western Gas is published by Western Business Papers, Inc., at 124 West Fourth Street, Los Angeles, California. Subscription price (in advance) 20 cents the copy; $2.00 per year; 2 years, $3.00; $3.00 per year foreign. Entered as second class matter June 1, 1925, at the postoffice at Los Angeles, under the Act of March 3, 1879.

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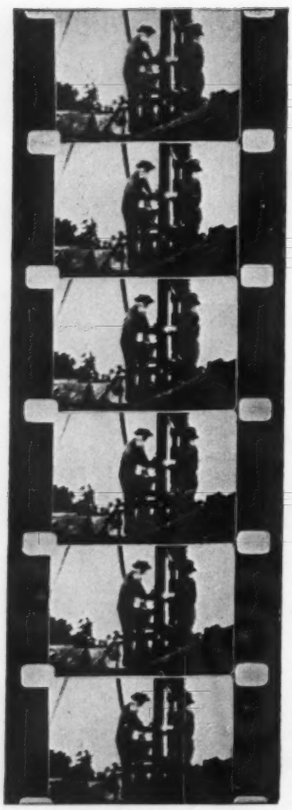

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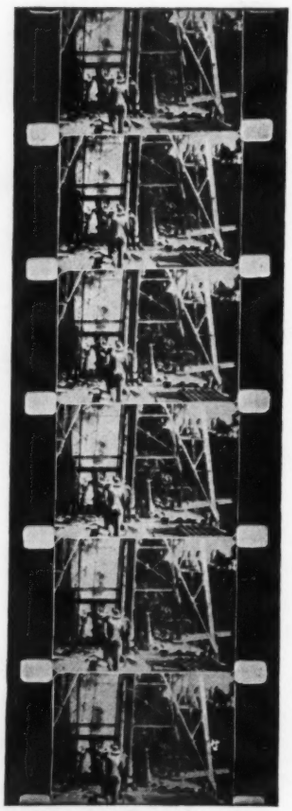

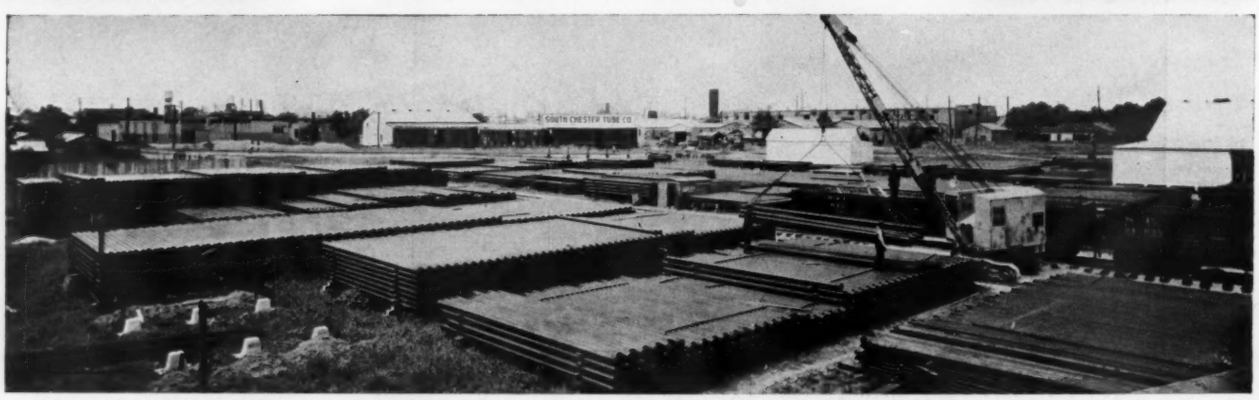

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THE PACIFIC COAST GAS ASSOCIATION

AND

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Contents for February, 1933

Is Municipal Ownership Slipping? 7
By E. F. McKay

Laclede's "Empty the Holder" Campaign 10
By F. L. Hill

The Economics of Removing Locked Meters 12
By Norman L. Hoff

Special Sales Methods for Special Sales Resistance 14
By George H. Finley

Draft Hoods 16
By R. M. Conner

PACIFIC COAST GAS ASSOCIATION 24

MEASUREMENT AND CONTROL 24

Can We Improve the Domestic Gas Meter? . . *By Lee Holtz* 24

BUTANE-PROPANE NEWS 30

Bottled Gas and City Gas Are Sales Allies 30
By T. Russell Robinson

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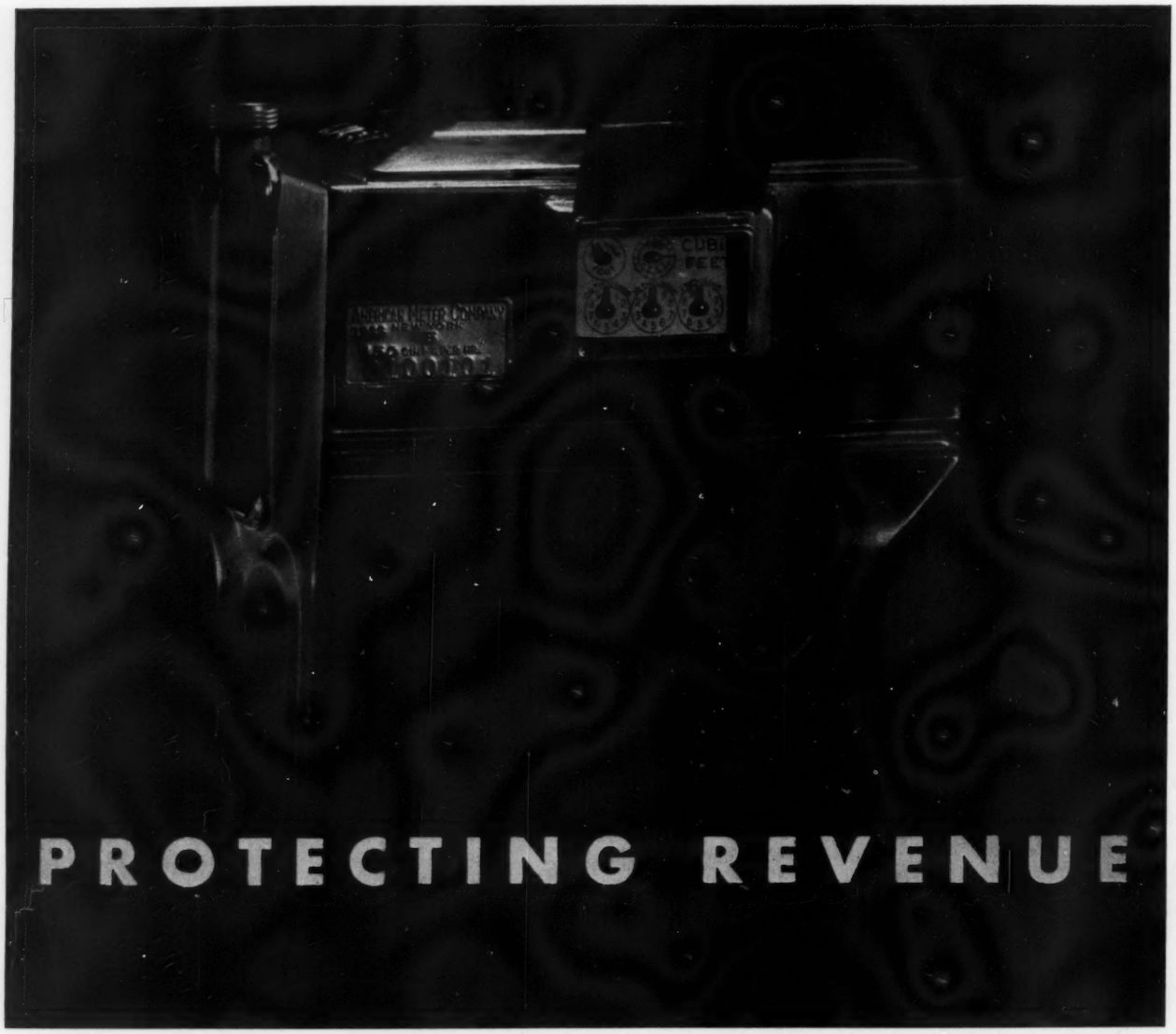

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February, 1933

WESTERN GAS

"Reg. U. S. Pat. Off."

Vol. IX, No. 2

A Monthly Journal of the Gas and Gas Appliance Industries in *Western America*

Is Municipal Ownership *Slipping?*

By E. F. McKAY

Manager
Oklahoma Utilities Association
Oklahoma City, Okla.

A POPULAR starting point for speakers and writers on subjects affected by business conditions of the past three years—and what subject could be omitted—has been to quote the statement:

"It is a gloomy moment in history. Not for many years—not in the lifetime of most men who read this paper—has there been so much grave and deep apprehension. In our own country there is universal commercial prostration," etc.

and then to explain the quotation is from Harper's Weekly of October 10, 1857, the intended reaction of the reader or listener being that since at that time the country, like Jonah, came out all right, history may be depended upon to repeat itself and tomorrow's sunrise to bring the dawn of a better day.

Far be it from me to lessen the optimism of those confident of an early and far-reaching betterment of the economic situation. On the contrary, I am in hearty accord with these heralds of the happy day, and am attuned to catch the musical note which is to sound unmistakably the hour of its beginning.

I am neither a prophet nor an economist. But I believe the law of cause and effect to have withstood the tidal wave of trouble, oft-recurring during the last three years, that has beaten down many old-time bulwarks of business. These were built by man. The law of cause and effect was not. It just was, and is, and evermore shall be. The return of better times will be an effect. One important factor in the cause is our gradually growing ability to separate the wheat of wisdom from the chaff of folly in our business and other affairs. A thousand evidences that this threshing process is going on might be cited.

My attention is directed, and yours invited, to the definitely increasing group

E. F. McKay

of citizens in business and politics who are beginning to realize that government has been occupying many fields where it did not belong. This goes for national, state and local government. No other accelerator can be employed in speeding up the return of prosperity comparable in effectiveness with leaving to business men the responsibilities of business affairs.

Two thousand years ago, it is related, five virgins demonstrated their foolishness by failing to have oil in their lamps. More recently several hundred American municipalities have demonstrated theirs by transferring the responsibilities of their public service from the shoulders of business men to the hands of politicians, but the numerical peak of these municipalities was recorded several years ago. Each year their tribe is becoming less numerous.

THE MUNICIPAL OWNERSHIP HOST

Prophet and priest of the municipal ownership host in recent years has been Carl D. Thompson of Chicago. He has enlisted in his army of propagandists many men of high personal and political station, paying them well in the pelf of publicity, for his boast of access to printed page, all the way from the "patent inside" to the metropolitan daily and including—very decidedly—the Congressional Record, with space unlimited and no postage, has been well justified by the record of his performance.

Six groups, interlocked by common dictatorships and constituting the pink-to-red Socialist-Communist propaganda machine in America, have sought to undermine confidence in the established order in this country. These groups, for which Carl Thompson has been the master mouthpiece, are the Public Ownership League of America, of which he is secretary, the League for Independent Political Action, League for Industrial Democracy, American Civil Liberties Union, Peoples Legislative Service and National Popular Government League, whose governing boards one year ago numbered in the aggregate 35 directors but included only 18 individuals. Capitalizing the fact that citizens generally have been seeking a turn in the road, as well demonstrated on November 8, Thompson appealed to the members of his organization for funds, saying:

"We know these are hard times, but people will listen to us now as never before. Now is the time to press forward harder than ever."

and, a little later:

"With the tragedies of the present depression dragging their tortures into the third year; and above all with municipalities, state and federal government as well as the general public crying out as never before for some rational, real and constructive way out of the wilderness, surely now is the time for the Public Ownership League to push forward—now is the time to keep the beacon lights burning—to stick to our task, to keep our magazine, our literature, our whole service going—now is the time to help and get others to help. Send your contribution."

The National Popular Government League, hand-in-glove with Thompson,

issued a leaflet under the headline "Why We Do Not Publish a Magazine," in which it stated that because of its ability to secure publication of its propaganda in newspapers, magazines and the Congressional Record it did not need to incur this expense.

The Public Ownership League's 15th annual report, issued last June, announced intended expansion of its field of action as follows:

"A new problem that has been coming to the front very rapidly of late is that of natural gas. The League has given special attention to this subject during the year and has prepared a bulletin on the subject."

It mentions cities in Nebraska, South Dakota, Louisiana, Kentucky and Kansas as among those seeking service of the League in this respect. As to the telephone industry this report stated:

"Another new subject that has come up for special attention is that of the telephone and telephone rates."

The report boasts of having secured during the past year "enabling" legislation in eight states, of having given the "services" of the League during the year to nearly 100 universities, and expresses satisfaction over "increased cooperation given to the public ownership movement through the press." The "enabling" legislation mentioned has reference chiefly to laws authorizing municipalities to establish municipal utilities without a vote of the citizens concerned, the usual method being to contract with machinery manufacturers for the installation of plants to be paid for out of earnings over periods of from two to 10 years.

EARNINGS CONTRACT A LIVE ISSUE

These so-called "earnings contracts" constitute one of the livest issues in the country involving the utility industry today. Courts in some states have sustained them and in others have held them void, the state law supposedly governing in each jurisdiction. In some states where such contracts have not been held void, courts and public officials have frowned upon them as contrary to public policy, and as tending to involve utility and municipal officials in turmoil and controversy, if not in actual corruption.

Governor Leslie of Indiana, who gave a pocket veto in August to Indiana House Enrolled Act 682, which had passed the legislature, announced on August 22 that he could not approve the measure, declaring, among other things, that one of the motivating forces behind the bill was to open the way of sale of unlimited amounts of equipment to municipalities. His statement embraced eight points, the gist of which was that the measure was contrary to public policy.

Public Service Magazine of Chicago, for December, 1932, summarized arguments against these contracts. Its points included the following:

Opens way to raiding municipal treasuries.

Would precipitate strife between factions in cities generally.

Highline service has displaced individual plants generally.

Will involve cities in endless litigation.

Equipment firms disavow general claim against city, but, if revenues fail, will bring suit.

If judgment secured city can issue bonds in payment and levy tax to pay bonds.

Purchase on proposed plan identical with any sale wherein creditor can abandon security and proceed against debtor.

Installment plan always involves higher price.

Carrying charges and long credit mean long profits.

Competition usually eliminated.

Manufacturer who is not inclined or able to go into the financing business cannot compete.

Plan encourages inefficiency in operation on account of lack of sense of responsibility to public by superintendent, and inclination to sacrifice safe operation for greater net earnings.

Temptation to divert other funds in interest of fulfillment of contract.

City likely to charge itself excessive cost for street lighting to increase plant revenue.

Temptation to relieve light plant from legitimate expenses to increase net earnings.

Low bid for plant not assured.

Deals of character proposed cause groups of citizens to ask personal advantages through underhanded means.

Public can always vote bonds for municipal plant, if desired.

Additional points pertinent in my own state (Oklahoma) are that we have no regulation or state supervision of municipal utilities of any kind; municipalities do not consider themselves bound by either commission regulation or state statutes affecting utility operation; some municipal gas utilities charge a minimum for service, which gas companies are prohibited from doing; municipal plants are tax exempt in this state and, through omission from tax rolls, make taxes higher for other taxpayers; and under the Oklahoma constitution any city may whenever the citizens so vote enter any business that it can authorize by franchise.

The supreme court of Oklahoma has twice held payment-from-earnings contracts void in this state as involving municipal indebtedness in excess of the constitutional limit. These decisions were in the Wagoner and Tecumseh contract cases. Notwithstanding the illegality of such contracts some Oklahoma cities, which entered into them prior to the court decisions referred to, are attempting to carry them into effect, no one having attacked them in these particular towns, and the negotiation of such contracts in other municipalities, regardless of the law and the decisions referred to, is being attempted constantly.

In Oklahoma, as in many other places, equipment companies negotiating earning contract with municipalities have been found inclined to change the terms of the contract to the disadvantage of the municipality after terms satisfactory to the citizens have been agreed upon. In Hominy, Oklahoma, after citizens had voted approval of a contract calling for payment of equipment notes through a period of seven years, it developed that before the election the equipment company had a side agreement with certain city officials for the cash payment of notes for the last two years of the supposed payment period, the city to use money from a waterworks sinking fund for this purpose, thus reducing the contract payment period from seven to five years. On the ground that terms of the contract had been misrepresented citizens opposed to the project secured a temporary federal injunction against it, and many believe that the project is dead. A rate readjustment is a factor in this situation.

On December 7, 1931 the Lima, Ohio city council passed an ordinance embodying an equipment purchase contract, bids to be opened January 11, 1932. The city was to have made monthly payments extending over a period of 10 years, payments being the difference between the then offered rate of the local power company and the switchboard cost of generating electricity at the new plant, the plant to become the property of the city at the end of 10 years without further payment whether or not the entire purchase price had been paid. In the meantime, about December 15, the specifications were revised in the interest of the equipment company, a labor factor being eliminated from the agreed cost of generating power, and the 10-year limit on monthly payments also being eliminated, which would extend the monthly payment period to whatever time might be required to pay the full purchase price. On December 28 the specifications were further revised, a charge of 6 per cent annual interest on the cost price being inserted. Altogether five revisions of the contract were made, each in the interest of the equipment company. Local newspapers revealed to the public these departures from the contract as originally agreed upon, with the result that on March 14, 1932, the city commission voted down the project of building a municipal plant and elected to purchase the city's energy requirements from the local power company.

In Campbell, Missouri, an equipment purchase contract on the earnings plan was held void by the federal district court, whereupon a new contract was entered into and operation of the plant, purchased under the original contract, continued without interruption. In civil

contempt proceedings the new contract was declared a subterfuge, the court holding the parties to the contract to be in contempt. Punishment for the same was fixed at the sum of all profits made by the city and the equipment company under the contract, plus expenses and attorneys' fees, all for the use and benefit of the local power company.

SALES WITHOUT DELIVERY

The extent to which proponents of municipal ownership are willing to go to maintain political control of a utility property, and there have been numerous such cases, is indicated by the effort of municipal utility proponents in Woodward, Oklahoma, to purchase, with funds received from the sale of a municipal plant, another plant to compete with the one disposed of. The Oklahoma supreme court held that such funds could not be so used but must be applied by the city to the discharge of general indebtedness of the city.

Another interesting case developed at Starkville, Mississippi, where, in 1930, a bond issue was voted to put the city into the electric business. The city had sold a former municipal plant to a power company in 1925, granting at the same time a 25-year franchise. The United States District Court enjoined the purchase of the new plant on the ground that such plant would violate a general warranty of quiet enjoyment by the power company of the distribution system which it had acquired from the city. In addition the court criticised severely the conduct of the engineering firm proposing to install the second plant, charging publication of false and misleading statements intended to influence the result of the bond election, and stigmatizing such conduct as "unfair, inequitable and made in an effort to interfere with the established business of the plaintiff and its customers," and as warranting an injunction restraining it from entering into any contract made possible by the election. The court said it could not in good conscience permit conduct of the sort disclosed.

Many other cases involving the earnings contract have arisen in many states. each could be studied with interest did space permit. A new law in Iowa undertakes to legalize such contracts in that state and has withstood two court attacks instituted by power companies. Utah, Missouri, Kentucky, Oregon, Nebraska, Hlinois, Texas, Idaho, California, South Dakota, North Dakota, Colorado, Georgia, Minnesota, Washington and Wisconsin are other states where phases of the issue involving the earnings contract principle have found their way into courts.

Perhaps no recent development touching this question is of more interest than the denunciation by Governor Murray of Oklahoma of efforts to secure, in his state, enabling legislation for the earnings contract plan. Governor Murray, who is easily understood, said in a newspaper statement:

"Last week, a Mr. Dalzell, who assumed to represent the Federal Reconstruction Finance Corporation, was in my office, seeking to get a law passed that would facilitate the issuance of bonds by certain officials in various cities to borrow money from the Federal Bureau for the construction of certain utility concerns. . . . Their plan would allow officials of cities, notwithstanding the Constitution, to borrow money and build certain enterprises and put them in such form as to avoid all taxes, all regulation by utility boards or corporation commissions, so that they might charge any rate they desired and thus 'skin' the people of a given town or city with high rates of service. . . . They have a representative in every state, and I have just recently, somewhat by accident, come into possession of this combination of supply men, electricians, manufacturers, and engineers, to bleed the American public. It is one of the most brazen and classical pieces of racketeering ever set up in a civilized land."

FROM THE evidence contained in this article the author invites the reader to form his own answer to the question, "Is Municipal Ownership Slipping?" Mr. McKay, from his vantage point as manager of the Oklahoma Utilities Association, illustrates his observations on municipal ownership with current examples drawn from gas, electric and telephone utility experience.—Editor.

THE "TAX-FREE TOWN" MYTH

The Public Ownership League of America, and some less celebrated advocates of political in lieu of business management of the utility industry, have been feeding the public, especially during the past two years, on the idea that municipal ownership and operation of utilities will reduce municipal taxation. The claim has been broadcast in a leaflet of the League, and in many newspaper articles, that the country has more than 60 municipalities tax-free through municipal utilities operation, with the suggestion that practically any municipality that will take over its utilities can hope to attain this devoutly-to-be-wished status.

Arthur Brisbane, in his syndicated daily column, and numerous less distinguished writers, have disseminated this propaganda industriously. Oklahoma has been the state offering the most numerous demonstrations of this happy economic achievement, according to these writers. Among the Oklahoma towns given wide publicity are four in Kay County, Oklahoma, proclaimed by Carl Thompson and his collaborators as tax-free. These towns are Ponca City, Tonkawa, Newkirk and Blackwell. In October last the county treasurer of Kay county published his annual delinquent tax list. It required 16 pages or 129 newspaper colums, or 24 colums more than the corresponding list for 1931. Ponca City's delinquent ad valorem tax list increased six columns, Blackwell's three columns, Newkirk's one and Tonkawa's two and one-half columns. Thus, it would appear that the list of unemployed in these cities does not include the tax-gatherer. These towns are among more than 80 in Oklahoma which last year did not levy a tax for general city expenses, and Ponca City has announced that for the current year it will levy no city taxes for any purpose. All these towns, of course, have school taxes levied against city property. Whether the absence of a general city tax may properly be accounted for by municipal utility operation would seem to be at least doubtful, since more than 40 of the towns of this group have no municipal utilities except waterworks.

Another Oklahoma town on Carl Thompson's list of towns tax-free through municipal operation is Tecumseh. This town has no municipal utility service except water. It has utility company gas service and buys utility company electricity for municipal distribution. It once had a municipal electric plant, now abandoned. It has no general tax for city purposes, but has a total tax levy against city property of 99.2146 mills per dollar of valuation, which means 99.21 cents for each $10 of valuation, $9.92 for each $100 of valuation, and $99.21 for each $1000 of valuation. This, of course, includes school, county and state, as well as city taxes. Levy for the city government alone is fixed at more than 64 mills per dollar of valuation, or more than $60 for each $1000 of valuation. The Shawnee, Oklahoma, News on December 20, 1932, commenting on Tecumseh's taxes, says that the city's sinking fund levy was made so high because of the municipal water and power plants established in that city a few years ago. This is one of the towns of which Carl Thompson brags.

(Continued on Page 36)

Scoring record on display during the campaign showing the standing of the three divisions in percentage of quota.

"Empty the Holder"

House-Heating Campaign *at* St. Louis

By F. L. HILL

Campaign Director
The Laclede Gas Light Company

ALTHOUGH the use of employees to produce leads in cooperation with the sales organization is not new in the utility industry, the part played by the employees of The Laclede Gas Light Co. in a recent house heating campaign in which that company practically doubled its house heating load in two months may prove interesting.

As the result of the introduction of natural gas mixed with manufactured gas to produce an 800 B.t.u. product, the lowering of the rates and the publicity given the change-over by the local press, company officials decided that the psychological time had arrived for an intensive house heating campaign.

The change-over was not completed until July 1, which meant that if anything was to be done before the heating season was under way it had to be done in a hurry. The campaign called for a comprehensive advertising program, the building of a larger sales organization, establishment of a clerical force and the numerous tasks necessary to conduct such an intensive drive as contemplated.

Advertising, of course, was necessary to build up consumer interest and consumer acceptance—and a carefully designed campaign was prepared, consisting of newspaper advertising, outdoor, direct mail and bill enclosures. For the first time the company used radio—not a sponsored program, but "spot" announcements each evening in connection with the weather reports. These came between national chain programs and were so well timed that many listeners were of the impression that the company was sponsoring the program which immediately followed the announcement. Many times these were sustaining programs by bands and orchestras with national reputations. The weather reports offered a "natural", in the parlance of radio advertising, as they gave the company plenty of opportunity for writing copy about ideal home heating conditions with automatic heating equipment.

Even though a thoroughly competent and high class sales organization had been gathered together, it was realized from the beginning that to accomplish the greatest results a large scale intimate contact with the prospective customer must be made. A survey of premises made during the period of adjusting appliances preparatory to turning in natural gas showed approximately 45,000 residences in St. Louis proper with central heating plants. Of this number of potential gas heating prospects, a list of 30,000 was carefully selected for a direct mail campaign. Obviously, it was out of the question to follow up or personally contact in any way such a large number, even with an extra large sales force.

Employees had been used with more than ordinary success in stock selling campaigns and it was suggested that with more than 1,000 employees available they could serve as the means through which a more intimate contact with the prospects could be established.

The suggestion met with approval from the beginning and a contest among the employees to be known as the "Empty the Holder" contest was decided upon.

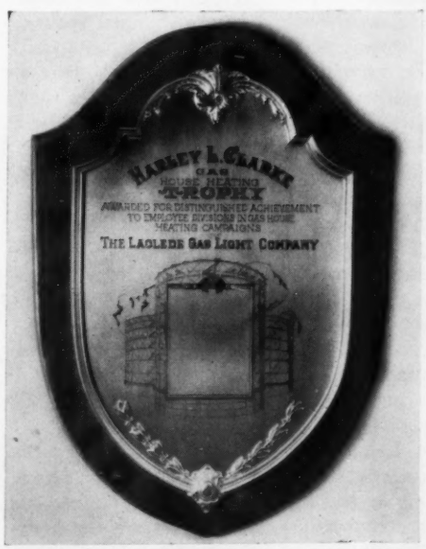
The main idea was to have the employees through personal contact secure signed prospect cards calling for an estimate of the cost of heating the prospect's home with gas. These cards were followed up by the sales organization. For each prospect which resulted in a sale the employee was to receive a $5 bonus and in addition cash prizes were offered for the most completed installations secured by individuals.

The campaign started the day after Labor Day and continued to November 1, running a little short of eight weeks, but employees were protected on bonus payments for 60 days after the actual closing of the contest.

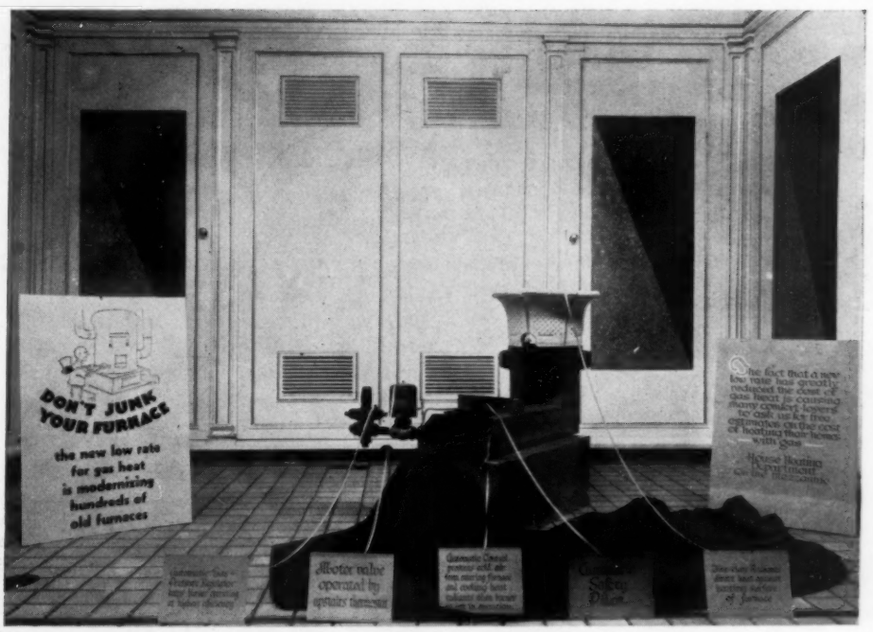
In the beginning the employees were given *carte blanche* to get their prospects wherever they might—and this phase of the campaign lasted three weeks, during which time some 1100 signed prospect cards were secured and turned in to campaign headquarters.

The original kit given to each employee contained complete instructions regarding the campaign, printed literature for distribution to prospects and a supply of prospect cards. Captains and commanders were supplied with report forms for daily transmission.

Interest in the campaign was stimulated and kept active through a series of 24 mimeographed bulletins to the employees (usually illustrated with a humorous slant and generally consisting of two or more pages)—also bulletins to commanders, captains and lieutenants almost every day suggesting ways and means of increasing efficiency of team workers' efforts.



The Harley L. Clarke Trophy, a silver plaque 18 by 24 inches, was awarded to the winning Southern Division.


DON'T JUNK YOUR FURNACE
the new low rate for gas heat is modernizing hundreds of old furnaces
Motor valve operated by upstairs thermostat

Two window displays used by Laclede Gas Light Co. during its "Empty the Holder" house heating campaign. Upper view shows a double window, and lower a single window, in the company's St. Louis headquarters building—both featuring Roberts Standard DeLuxe burners. A cut-away furnace with Roberts burner installed was located on the showroom floor, and another of the burners was mounted on a movable platform which was shifted to various points on the sales floor during the campaign.

Beginning October 1 the 45,000 names of potential gas house heating prospects were divided among the employees and sent to them, 10 names each week, for a call and report. This gave every employee a definite objective and something tangible to work upon. The result was an immediate increase in number of prospects turned in daily, and the quality of the prospects seemed to be just as good, if not better, than those which the employees had been getting hit or miss.

At the close of the campaign, on November 1, a total of 3,177 signed prospect cards had been turned in—an average of approximately three per employee, This was somewhat short of the quota originally set but was highly satisfactory in view of the conditions and thoroughly gratifying in that the company's gas house heating business was practically doubled.

The Southern Division in a hair-raising finish passed the Northwestern Di-

(Continued on Page 46)

The Economics *of* Removing Locked Meters

By NORMAN L. HOFF

Assistant Engineer
*Los Angeles Gas and Electric Corporation**

DURING the past few years numerous writers have presented their views on the advisability of removing locked meters. A review of what has been written discloses a lack of unanimity among the various authors. Perhaps this is not surprising in view of the fact that local conditions have a forceful bearing upon the conclusions drawn. Moreover, it is difficult to judge whether the same aspect of the problem has always been under discussion. For example, some authors seem to have endeavored to answer the question, "When is it most economical to remove locked meters?" Others seem to have been interested primarily in answering the question, "Is it economical to remove locked meters at any time?"

Norman L. Hoff

A professional gambler might well ask himself a similar set of questions in discussing "The Economics of Making One's Livelihood by Means of Rolling Dice." For example, when is it most economical to cast dice; and, is it ever economical to cast dice? In this case the answers are, obviously, that it is never economical to cast dice,** but if we must gamble with the dice, let us do so only when covered by a side bet greater than the amount at stake, that we won't "pass."

In the case of removing locked meters, which is every bit as much of a gamble, the same conclusions hold true, namely, it is never economically sound to remove locked meters, but if we must remove them let us do so at such a time that the economy effected in removing them will help offset the almost certain loss sustained by reason of their removal.

The answers to the dice questions cannot be reasonably questioned for the laws of probability are unaffected regardless of whether the gambling is done in Los Angeles, San Francisco or "Timbucktoo." On the other hand, the answer to the locked meter questions are, as yet, unsupported statements and remain to be proved.

The mathematician, in calculating the chances of winning or losing in a gambling game, quite frequently utilizes a probability curve plotted either from mathematical calculations or actual experience data in order to arrive at a solution. Both types of curves are illustrated in the article already cited. In this case, however, the curve takes a slightly different form and may be termed a biased probability curve and illustrates the type of curve which might be expected to apply to the rolling of loaded dice. Fig. 1 is such a curve, plotted from the histories of 16,567 locked meters on the system of the Los Angeles Gas and Electric Corp. A similar curve plotted from data on locked meters in Seattle, Denver, New Orleans or New York would, without doubt, be of the same general character. This can be deduced from the following logic:

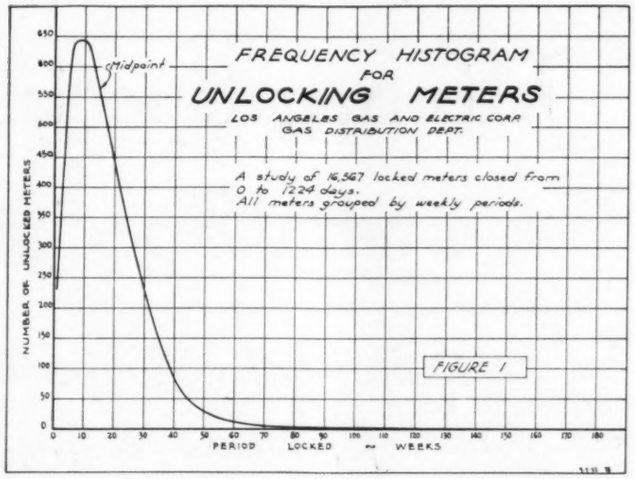
A gas meter, in the vast majority of cases, is classified as a locked meter when the consumer moves out of the house where it is set and it becomes necessary to discontinue service to the vacant premises. Now, when a meter becomes locked two parties are vitally affected, (a) the gas utility, and (b) the property owner. The property owner is perhaps more interested in obtaining a new tenant for the house, because of his relatively lesser capital, than the gas utility. If the property fails to re-rent in a period of a month or two, the average landlord's overhead expenses will demand immediate action to dispose of the vacancy. The natural result is a reduction in the rental price or the offering of certain concessions in order to attract a new tenant. This competitive condition of property rentals is the same, to a large degree, the world over, and defines the bias on the locked meter probability curve. The degree of bias may vary with the locality and with the general state of business conditions, but the variation will seldom bend the curve very far either way. It does not seem unreasonable to assert, therefore, that calculations based upon the curve in Fig. 1 will apply, in general, to the locked meter situation throughout the country.

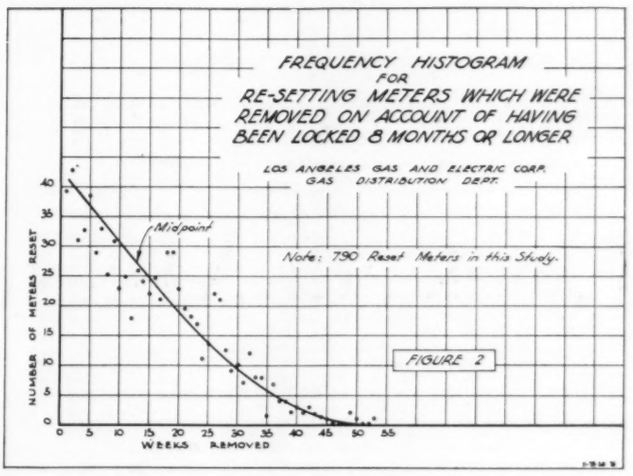
It will be noted in Fig. 1 that the curve reaches a peak at about eight weeks or two months, indicating that the most probable point at which a locked meter will be unlocked is after about two months' idleness. Incidentally, the "periods locked" on the abscissae scale in Fig. 1 do not necessarily mean exactly that, for in some cases the meters were removed before being unlocked. Where this occurred, the period over which the account remained closed on the corporation's books was used, it being assumed that if the meter had been left set it would have remained locked that same period of time. As shown on the curve, the mid-point is at 105 days or 15 weeks closed, which indicates that one-half of the locked meters studied were unlocked prior to that time. From this point it is evident that a locked meter selected at random on the distribution system has a "fifty-fifty" chance of being turned on again inside of 105 days. In order to show economy in removing this meter it must be demonstrated that its use for a period not exceeding 105 days is more economical than paying the price of ownership on a newly purchased meter for the same period of time.

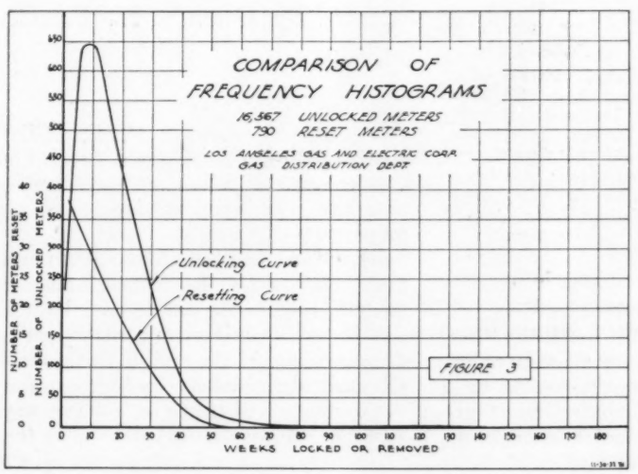
Essentially, it is a contrast of cost between borrowing and buying. Removing a locked meter may be likened to the borrowing of a meter from the manufacturer with the understanding that no rental will be charged but a truck must be sent to pick the meter up at the

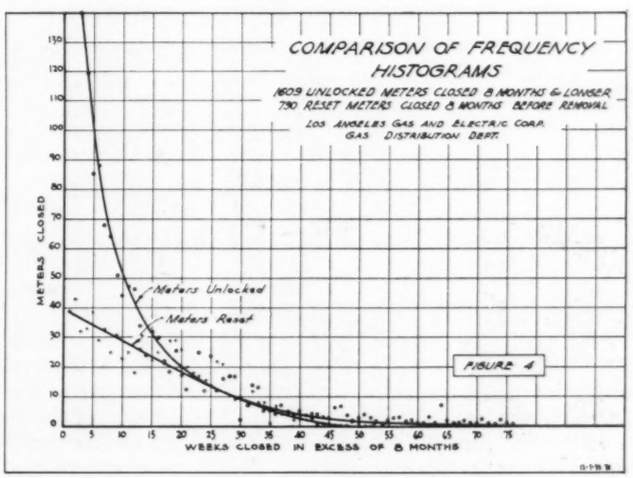
*Presented before the Pacific Coast Gas Association's Organization Conference, San Francisco, Calif., December 14-15.

**"Shall We Take a Gambler's Chance in Distribution Design?" *Western Gas*, Vol. VII, No. 4, issue for April, 1931, page 24.




FREQUENCY HISTOGRAM
FOR
RE-SETTING METERS WHICH WERE REMOVED ON ACCOUNT OF HAVING BEEN LOCKED 8 MONTHS OR LONGER
LOS ANGELES GAS AND ELECTRIC CORP.
GAS DISTRIBUTION DEPT.
Midpoint
Note: 790 Reset Meters in this Study.
NUMBER OF METERS RESET
WEEKS REMOVED
FIGURE 2




COMPARISON OF FREQUENCY HISTOGRAMS
1609 UNLOCKED METERS CLOSED 8 MONTHS & LONGER
790 RESET METERS CLOSED 8 MONTHS BEFORE REMOVAL
LOS ANGELES GAS AND ELECTRIC CORP.
GAS DISTRIBUTION DEPT.
Meters Unlocked
Meters Reset
METERS CLOSED
WEEKS CLOSED IN EXCESS OF 8 MONTHS
FIGURE 4

manufacturer's warehouse, deliver it to the utility's meter repair shop for overhauling and testing and then sending it back to the manufacturer's warehouse after the loan period. Buying a new meter from the manufacturer means that the utility must provide, from its revenues, enough money to pay a "fair rate of return" and set aside an annuity for depreciation reserve on the amount of capital invested in the meter.

If these two costs be equated one against the other it is possible to calculate the time at which they exactly balance. No attempt will be made here to show where this point of economical balance occurs because of the many variable factors involved. By comparison, however, an attempt will be made to show the absurdity of expecting economy under ordinary conditions.

Let it be assumed that an average locked meter costs $9.00 new; in most cases it will be less than this. Then the fixed capital charges, using an 8 per cent "fair rate of return" and a 6 per cent sinking fund factor for depreciation reserve, based on a 25-year expected life, are calculated as follows:

$9.00\ (.08 + .018227) = \$0.884$ per year

0.884 divided by $365 = \$0.0024$ per day

$$0.0024 \times 105 = \$0.25$$

This calculation shows that the amount of money which may economically be spent in borrowing and returning the locked meters must not exceed 25 cents each. Seldom indeed will it be found that one quarter dollar will be sufficient to meet this expense.

Now if it is not economical to remove locked meters, when is it least *un*economical to remove them?

The importance of this question to the utility management cannot be denied, especially in view of the fact that, in these times, there may be from 6 per cent to 9 per cent of the total number of meters idle on consumers' premises. A proposal to purchase new meters in face of this is likely to invoke executive wrath. It behooves the operating man, therefore, to make the best of a bad situation.

The Los Angeles Gas and Electric Corp., prior to this study, had removed a number of locked meters varying in periods closed from eight months up to several years. The author, with the foregoing line of reasoning in mind, selected all of the removed meters which had been reset and plotted a frequency histogram or probability curve for their resetting, as shown in Fig. 2. It was found that very little had been gained by waiting the eight months, for the mid-point of the curve was still almost 15 weeks. To be exact, the mid-point was lowered from 105 to 92 days.

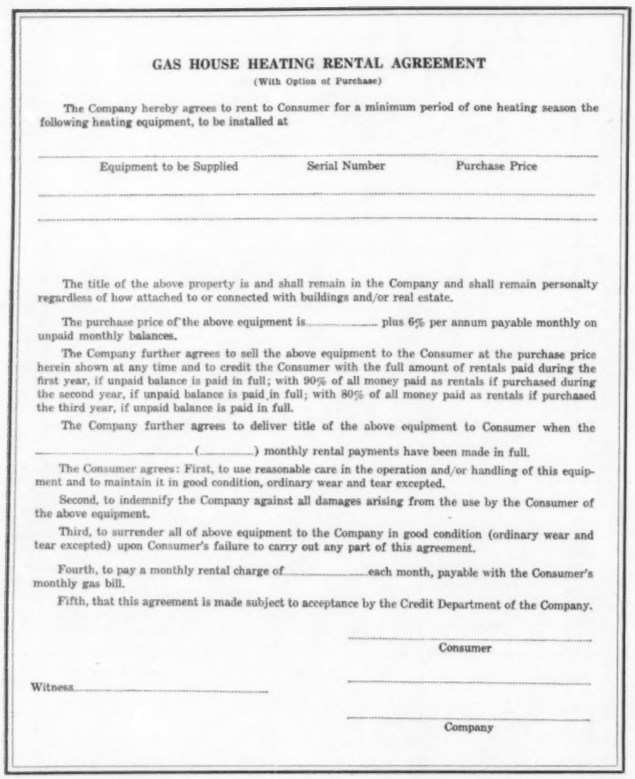
Naturally it is assumed in making this comparison that there is no essential difference between unlocking a locked meter and resetting a removed meter. In both cases the consumer's demand for gas is the governing factor.

It is quite evident, from a comparison of the curves in Figs. 1 and 2, that there is a lesser probability of economy in removing meters closed eight months or longer than there would have been had they been removed on the day they became closed. For example, using the fixed capital charges per day already calculated, then

$$0.0024 \times 92 = \$0.22$$

or a reduction in the allowable amount of money of $0.03 per meter.

(Continued on Page 28)



GAS HOUSE HEATING RENTAL AGREEMENT
(With Option of Purchase)

The Company hereby agrees to rent to Consumer for a minimum period of one heating season the following heating equipment, to be installed at

Equipment to be Supplied | Serial Number | Purchase Price

The title of the above property is and shall remain in the Company and shall remain personalty regardless of how attached to or connected with buildings and/or real estate.

The purchase price of the above equipment is ..... plus 6% per annum payable monthly on unpaid monthly balances.

The Company further agrees to sell the above equipment to the Consumer at the purchase price herein shown at any time and to credit the Consumer with the full amount of rentals paid during the first year, if unpaid balance is paid in full; with 90% of all money paid as rentals if purchased during the second year, if unpaid balance is paid in full; with 80% of all money paid as rentals if purchased the third year, if unpaid balance is paid in full.

The Company further agrees to deliver title of the above equipment to Consumer when the ..... (.....) monthly rental payments have been made in full.

The Consumer agrees: First, to use reasonable care in the operation and/or handling of this equipment and to maintain it in good condition, ordinary wear and tear excepted.

Second, to indemnify the Company against all damages arising from the use by the Consumer of the above equipment.

Third, to surrender all of above equipment to the Company in good condition (ordinary wear and tear excepted) upon Consumer's failure to carry out any part of this agreement.

Fourth, to pay a monthly rental charge of ..... each month, payable with the Consumer's monthly gas bill.

Fifth, that this agreement is made subject to acceptance by the Credit Department of the Company.

Consumer

Witness .....

Company

AT LEFT:
Rental agreement used by United Light and Power distributing companies in developing house heating sales on self-liquidating lease purchase plan.

Meeting Special with Special

Rental-Sales Plans and for House Heating

By GEORGE H. FINLEY

A NUMBER of companies, especially in sections where recent change-over to natural gas has cut sales and revenues, are finding it impossible to wait for their load curves to show the stimulating influence of an improvement in general business. Sales must be had now, even though it takes something more than hard work along routine lines to produce them.

In regions where recent change-overs have occurred the house heating load naturally commands preferred sales attention, for it is essential if volume sales are to be restored.

Adding new gas load in real volume through conversion burners, furnaces, boilers or other major heating equipment is a nice problem in executive planning and sales execution, characterized by all of the elements of special resistance which must be surmounted in general commodity selling during this period. Analysis of this special resistance shows that it arises chiefly from fear of future security—fear on the part of workers that jobs will not last; fear on the part of landlords that rental properties will lie vacant. A house heating sales plan, fitted to the conditions of 1933, therefore must look at these factors squarely.

Various plans for placing major house-heating equipment in use without making demands upon the customer which would be prohibitive under present conditions have been introduced in recent months. In some instances the gas company has met the problem of adding this essential load quickly by extending purchase terms over an unusually long period, with a minimum down payment. A number of companies have some modification of the rental plan in effect, giving the consumer option to make future purchase of the equipment and apply past rental payments on the purchase. Some companies have chosen to capitalize the equipment, placing it on the consumer's premises without charge but adding into the gas rate a small amount to amortize the costs involved, over a several-year period.

Admittedly, these sales tactics lie somewhat off the beaten track and may be regarded as products of the special merchandising conditions now existing. As such they are of definite interest and several sales executives have cooperated with *Western Gas* to present details of a few typical plans in the following symposium.

It should be observed at the outset that these special sales programs have been designed in almost all instances to include the appliance and heating equipment dealer, making it possible for him to offer the same inducements to his prospects that the gas company is featuring.

Sales-Rental Offers

Several distributing companies in connection with the Northern Gas and Pipe Line Co. have this past season inaugurated a rental plan to induce greater central heating in the states of Nebraska, Iowa, and Minnesota. M. E. Miller, salesmanager for the Council Bluffs Gas Co., gives the following summary of how the plan operates for this Iowa property.

The Council Bluffs Gas Co.'s rental plan provides for the renting of equipment to responsible people on a basis of five years with minimum contract period of one year. At the end of five years if all payments have been made it is agreed the company will then give the customer a bill of sale for the equipment.

Two types of equipment are offered under this plan, a remote manual control conversion burner, completely installed for an installation charge of $10, with the order, and 60 rental payments of $1.85 per month. The second type of equipment offered is the automatic control conversion burner, sold complete for the sum of $10 to cover the installation charges, and 60 rental payments of $2.85 per month. Gas designed furnaces and boilers were not included in the rental plan.

The regular cash purchase price is $98 for the remote manual control unit and $140 for the automatic control unit, together with interest at the rate of ½ of 1 per cent per month on the original unpaid balance, which amounts divided by the number of months time desired gives the amount of rental charge per month. The rental plan was worked out in such a way that the different dealers in the territory could offer the same plan to their customers, the company agreeing with the dealers to pay them a load building bonus of $15 for each remote control job installed, and $20 for each automatic job installed, and in addition the company agreed to carry the dealers' accounts. The company reserved the right to inspect dealer instal-

Sales Resistance Sales Methods

Burner Tip Rates Evolved Load Promotion

Editor
Western Gas

AGREEMENT
LANDLORD, TENANT AND COMPANY

AGREEMENT, Made and entered into this _____ day of _____ 193__ by and between _____ (hereinafter referred to as Lessor), party of the first part, and _____ (hereinafter referred to as Lessee), and _____ a corporation of the state of _____, (hereinafter referred to as Seller), parties of the second part.

In consideration of the sum of One Dollar in hand paid by each of the parties of the second part to the party of the first part and of other good and valuable consideration, the receipt whereof is hereby acknowledged, it is agreed by and between the parties hereto as follows:

Lessor hereby grants to Lessee the right to install on the premises known and described as _____ in the City of _____ State of _____, (said premises being owned by Lessor and occupied under lease by Lessee and hereinafter referred to as the leased premises), the following described property:

Lessor hereby grants to Lessee the right to remove any property now located on the leased premises reasonably necessary to allow the proper installation of the above-described property. Lessee shall protect the property so removed and shall keep the same in a safe place, and shall be liable for any damage occurring thereto resulting from or through his negligence.

The property installed by Lessee is and shall remain personalty regardless of how attached to or connected with the leased premises and Lessor grants to Lessee the right to remove the same at any time provided Lessee shall promptly replace that property which was removed upon the installation of the new property and shall restore the leased premises to the same condition (less ordinary wear and tear) which existed immediately prior to the installation of the new property.

It is understood that the property to be installed by Lessee was purchased under a conditional sales agreement by Lessee from Seller, and that Seller holds title thereto subject to the due performance of the obligations of Lessee under said contract. In the event Lessee fails to perform any of his obligations thereunder, Lessor hereby grants the right to Seller, its agents or employees, to enter upon the leased premises and remove said property, at any time, provided, however, that Seller shall replace or cause to be replaced, the property removed upon the installation of the new property and shall restore the leased premises to the same condition (less ordinary wear and tear) which existed immediately prior to the installation of the new property.

IN WITNESS WHEREOF The parties hereto have executed this agreement in triplicate the day and year first above written.

AT RIGHT:
This form was developed for use in conjunction with the form shown on opposite page, in sale of house heating equipment to renters by United Light subsidiaries.

lations before paying the load building bonus or financing the sale. Fourteen dealers signed this sort of agreement with the company.

The gas company's own salesmen were compensated on the basis of 10 per cent commission with the guaranteed drawing account.

United Light Plan

Another group of middle west gas companies which has in operation a variant of the rental-purchase plan for sale of house heating equipment is the United Light and Power system. Through the courtesy of C. A. Nash, vice-president in charge of sales promotion for the United Light and Power Engineering & Construction Co., this comprehensively developed plan is reviewed below:

A survey of the gas consumers served by People's Gas & Electric Co. at Mason City, Iowa, Fort Dodge Gas & Electric Co. at Fort Dodge, and Iowa-Nebraska Light & Power Co., Lincoln, led the United Light sales executives to believe that the market which could be quickly put on the lines for house heating consisted roughly of 2,000 conversion burners, 500 furnaces, and 500 circulators—a load of 687,500 M c.f. per heating season figuring furnaces and conversion burners to consume 250 M c.f. each, and circulators 125 M c.f. Having determined this considerable sales expectancy the company made available some $440,000 for the heating equipment needed. Arrangements were made for dealer participation, as outlined later.

The United Light program, worked out to sell the above market in a minimum time, is a self-liquidating lease purchase plan. No down payments are required, though salesmen are instructed to request them whenever possible, reducing the amount of monthly payments. Monthly unpaid balances carry 6 per cent interest charge. Terms and payments are adapted to the customer's ability, within reason, but the maximum payment period is set at five years for furnaces and boilers, and two years for circulators. Salesmen are urged to sell on shorter periods if possible, regarding three and one-half years as the standard period.

To facilitate calculation of monthly payments, factors have been established which include interest charges. Thus the total sum to be charged may be multiplied by the following factors:

For 3-year period	.0304
For 3½-year period	.0265
For 4-year period	.0235
For 5-year period	.0194

and the result will be the monthly payment including interest.

A rigid credit policy has been adopted, based on the company's own records of past payment where the sale is to a present customer. Credit approval is required for all orders.

Other details of the United Light plan may be gleaned from the several forms which are reproduced with this article—the Gas House Heating Rental Agreement; the Landlord, Tenant and Company Agreement; the Memorandum of Agreement between company and dealer. It will be noted on the rental agreement that the heating equipment may be purchased at the named price at any time before the expiration of the contract. If full payment of balance is made in the first year the buyer is credited with 100 per cent of rental payments made to date; if purchase is made in the second year buyer is credited with 90 per cent of past payments; if purchase is made in the third year, buyer is credited with 80 per cent of past payments.

One favorable factor in the use of some such plan as the above, the United Light executives feel, is that installation work can be handled more economically in volume through more efficient shop routine, and the savings passed on to the customer. A high order of installation work is insisted upon, particular care being given to balancing the systems where conversion burners are installed. Each installation includes an automatic humidifier.

Since it is regarded as important to have an automatic water heater at each heating installation, the water heater may be included in the rental-purchase agreement also.

Additional advertising and sales effort were of course arranged for in connection with the campaign. Salesmen's compensation was on the following basis: A $100 monthly drawing account, for which $500 in merchandise must be sold; 10 per cent commission on all sales above $500; a 1 per cent bonus on all sales in any month when more than $2,000 in merchandise has been sold.

(Continued on Page 34)

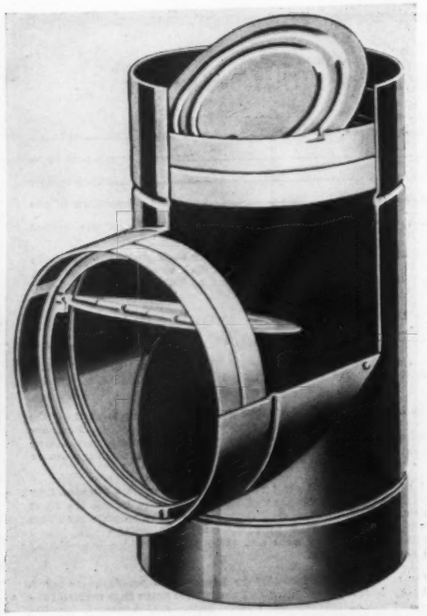


Fig. 1. Automatic type draft hood. (Reproduced by courtesy of Hotstream Heater Co.)

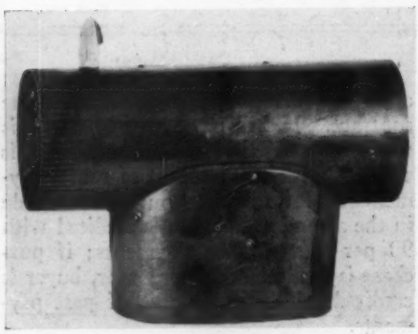


Fig. 2. Horizontal draft hood, developed by Consolidated Gas Electric Light & Power Co. of Baltimore, Md.

Draft Hoods

By R. M. CONNER

Director, American Gas Association Testing Laboratory, Cleveland, Ohio.

IT seems that draft hoods, previously regarded by many engineers as being rather unimportant, are now to become recognized as one of the most essential portions of a gas appliance in insuring its safe and satisfactory performance. While utilization engineers have realized for a number of years the necessity of employing some type of device that would insure uniform draft conditions upon the burner flame, permit ready escape of the combustion products in the event of flue stoppage, and properly regulate excessive drafts, nevertheless, very little constructive thought was given the design of an effective device of this nature until quite recently.

Although devices of one form or another designed to accomplish the same purposes as a draft hood have been employed for a good many years, particularly on gas boilers, very little standardization of their construction and design has been effected. The Consolidated Gas Co. of New York, so far as the writer knows, can be credited with supplying the gas industry at large the first specifications on draft hoods. Information of this nature showing dimensional features of acceptable hoods appeared in the first issue of the American Gas Association Industrial Series Handbook on House Heating and has been printed in each succeeding issue. The Consolidated Gas Electric Light & Power Co. of Baltimore has also done considerable development work on draft hoods, particularly those of the horizontal types. It is known, of course, that other gas companies and a number of the manufacturers have applied certain specifications in draft hood design, although for the most part, the dimensional standards followed were more or less the outgrowth of "rule of thumb" methods, many of which have since been proven experimentally to be incorrect.

There are four general types of draft diverters; first, the built-in type; second, the automatic, (Figs. 1 and 4); third, the horizontal, (Fig. 2); and fourth, the vertical, (Fig. 3). There is such a wide variation in design of the first mentioned class that it does not seem advisable to attempt to discuss it. Furthermore, it seems that diverters of this type are growing somewhat less common, although they do serve a very useful purpose in many instances where, for important reasons, it is impractical to use either of the other three mentioned types.

R. M. Conner

The number of automatic types of draft hoods on the market is rather small. Furthermore, the experience gained from the use of such devices is extremely limited. Consequently, a discussion on the relative merits of them at this time would be rather out of place. From a purely theoretical standpoint it would seem that designs of this nature should possess a number of definite advantages. There are several practical difficulties to be overcome, however, which may ultimately offset these inherent advantages.

Fig. 3. Vertical cone type draft hood, developed by the A. G. A. Testing Laboratory.

Horizontal type draft hoods are not necessarily a new development, although satisfactory designs of this nature have only recently been fairly well perfected. This design is particularly well adapted to installations where sufficient head room is at a premium, or where it is advantageous to run directly from the vent pipe outlet to the chimney flue. Furthermore, it has many advantages from a utility standpoint. However, as will be brought out later, it is somewhat more difficult to design than one of the vertical type.

Specially constructed vertical type draft hoods somewhat similar to the one shown in Fig. 3 are sometimes installed in a horizontal position. While they serve fairly satisfactorily when used in this manner, they are not generally as well adapted, for obvious reasons, to such

purposes as one specially designed for this purpose. The vertical type is by far the most commonly employed and is probably most widely used where devices of this nature are required.

A discussion of the general subject of proper ventilation of gas appliances naturally should take into consideration chimney conditions. The gas industry is greatly indebted to Frank Wills, production engineer of the Pacific Gas and Electric Co., for his thorough review of this subject. Interested parties are referred to his two articles appearing in the August and October, 1932, issues of *Western Gas*. The rules evolved by Mr. Wills permit the engineer to size the appliance properly for the chimney flue. Fortunately, most chimneys in existing buildings were initially designed for the use of solid fuel. Consequently, they are usually ample in size for any gas-designed unit, and in fact they are generally considerably larger than is really necessary. Therefore, the engineer seldom has to worry about a lack of chimney capacity. Such matters, however, as lack of proper draft, low chimney temperatures with consequent condensation of moisture in the flue products, often represent rather trying problems.

About a year ago the A.G.A. Approval Requirements Committee, headed by R. B. Harper, vice-president of The Peoples Gas Light & Coke Co., approved the creation of a sub-committee to draw up listing requirements for draft hoods. Carl H. Flink, director of the Research Laboratory of the American Radiator Corp., was selected as the chairman of this important committee. He was supplied with a very able group of engineers to assist him, all of whom had had many years of experience in the utilization end of the gas business. This committee promptly recognized the necessity of securing some fundamental information on the performance of draft hoods before beginning its work, and assigned the task of securing such data to the A.G.A. Laboratory. Approximately a year's time was consumed in collecting such information on various types and designs of hoods. Needless to say, it was found that many of them, some of which had been rather widely used, were found to be entirely unsatisfactory.

From the beginning it has been the draft hood committee's thought that a satisfactory device of this nature should accomplish the following purposes:

1. Protect the burner and pilot flames from back drafts.

2. Insure ready escape of the products of combustion in the event of partial or total flue stoppage.

3. Prevent undue leakage of the products of combustion into the atmosphere surrounding the appliance when it is operating under normal draft conditions.

4. Offer a minimum amount of resistance to the passage of the combustion products from the appliance to the chimney flue.

Inasmuch as at least two of these essentials are almost diametrically opposed to each other in principle, it can readily be seen that the design and construction of a device that will accomplish the above mentioned purposes is far from being a simple matter.

A.G.A. approval requirements for the most important types of gas appliances specify in effect that such equipment, when operating under normal conditions without a flue connection must possess the ability to create its own draft. Obviously, this is a rather severe test and one which, in the writer's opinion, all common types of equipment supplied with atmospheric types of burners should meet. Furthermore, most appliances, particularly those types which consume relatively large quantities of gas, are designed to control accurately the admission of excess air, operate at reasonably low stack temperatures and in general provide the customer with an efficient installation. These requirements, however, result in making most gas appliances rather sensitive to slight variations in chimney draft, all of which makes an effective means of correct draft regulation on the appliance absolutely essential. Here is where the draft hood, if properly built, serves a most useful purpose.

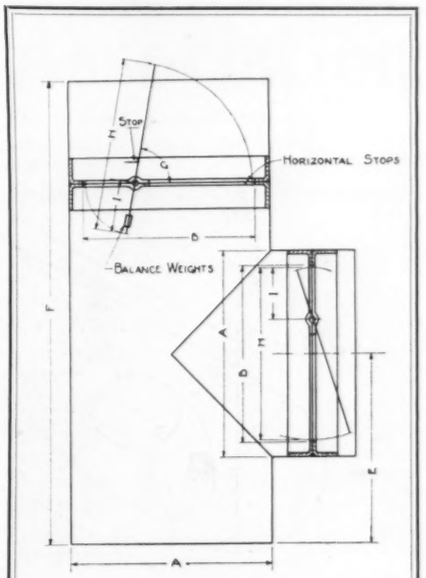


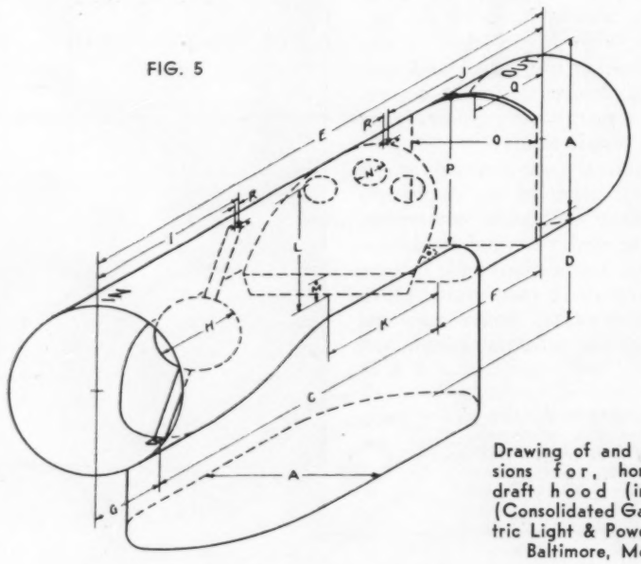
Fig. 4. Scematic drawing of, and dimensions for, Automatic "T" type draft diverter. (Hotstream Heater Co.)

Pipe Size In.	A In.	B In.	C In.	D In.	E In.	F In.	G Deg.	H In.	I In.	J In.	K In.	Aluminum Flutters In.	Black or Galvanized Tees Ga.	Aluminum Tees In.
3	3	2 9/16	2 9/16	3	2 3/4	6 3/4	80	2 1/2	3/4	2 1/2	3/4	0.0125	28	0.0125
4	4	3 9/16	3 9/16	4	3 1/2	8 1/2	80	3 1/2	7/8	3 1/2	7/8	0.0125	28	0.0125
5	5	4 9/16	4 9/16	5	4 1/8	9 5/8	80	4 1/2	1	4 1/2	1	0.0125	28	.....
6	6	5 1/4	5 1/4	6	4 7/8	10 7/8	80	5 5/16	1 1/8	5 5/16	1 1/8	0.0125	26	.....
7	7	6 5/16	6 5/16	7	5 1/2	12 1/2	80	6 1/8	1 5/16	6 1/8	1 5/16	0.020	26	.....
8	8	7 5/16	7 5/16	8	6 1/4	14	80	7	1 1/2	7	1 1/2	0.020	26	.....

Numerous data secured by the A.G.A. Laboratory in Cleveland and by other organizations elsewhere indicate that chimney drafts during the heating season under actual service conditions vary all the way from a down-draft of approximately 0.1 inch water column to 0.1 inch up-draft, 0.005 inch up-draft probably being about average. The most difficult factor to deal with, however, is the fact that draft conditions in any given chimney over a period of 24 hours will often vary appreciably, to say nothing of the changes which will take place over an entire heating season. This fact, of course, points to the advisability, if not absolute necessity, of having a device installed between the appliance and the chimney flue that will make the performance of the attached gas-burning equipment, to all practical purposes, independent of chimney draft conditions.

Draft hoods, like all other accessories, possess a capacity at which they will function best. Experimental findings have indicated that this capacity is not necessarily a function of the size of the hood, although it should be, if the desired degree of standardization is ultimately to be accomplished. Various authorities indicate that the vent outlets of gas appliances should accommodate readily the products of combustion formed during the burning of quantities of gas containing from 5,000 to 7,500 B.t.u. per square inch of flue collar outlet. Here again it will be noted, however, that the actual capacity at which an acceptable resistance to the passage of the combustion products from the appliance is attained depends quite largely upon the temperature of the flue pro-

FIG. 5



Drawing of and dimensions for, horizontal draft hood (inches). (Consolidated Gas Electric Light & Power Co., Baltimore, Md.)

excess air and slightly upon the kind of gas consumed. For all practical purposes, however, the latter item may be neglected. An examination of the test data secured on some 460 different appliances approved by the Association's Laboratory indicates that an average of 1 square inch of flue outlet area is provided for each 5,000 B.t.u. input capacity. This figure in turn resolves itself down to about 90 cubic feet of products per hour per square inch of cross-sectional area of the draft hood. Based upon these and other data the following tentative performance tests for draft hoods have been derived and have been submitted for criticism by the Sub-Committee on Listing Requirements for Draft Hoods:

A. Capacity

The pressure drop through a draft hood, when air at 300 degrees F. is flowing through it at a rate of 90 cubic feet per hour per square inch of inlet pipe area, shall not exceed 0.005 inch water column.

Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
4	4	6	7⅜	2⅝	11⅞	2¾	1¾	2	4½	4	2⅞	2⅞	½	¾	2⅞	3⅝	1¾	¼
5	5	7	8⅛	3¼	12⅝	2¾	1¾	2½	4½	3¾	3¼	3¼	⅝	1	3½	4¾	2	¼
6	6	8	9¼	4	13¾	2¾	1¾	3	5¼	4	3¾	4¼	¾	1	4½	5½	2	¼
7	7	9	10½	4¾	15	2¾	1¾	3½	5⅝	4½	4¼	5	⅞	1⅛	5	6½	2	¼
8	8	10	11⅝	5⅜	16⅛	2¾	1¾	4	6¼	4¾	4⅝	5⅝	1	1¼	5¾	7¼	2	¼
9	9	11	12½	6⅛	17	2¾	1¾	4½	6¾	4¾	5	6⅜	1⅛	1¼	6½	8	2	¼
10	10	12	13¾	6¾	18¼	2¾	1¾	5	7⅝	5	5½	7	1¼	1⅜	7½	9	2	¼

Pipe Size	A	B	C	D	E	F	G	H	I	J	K	L	M
3	3	3	5.5	7.0	3.8	0.7	4.4	3.0	1.5	2.5	0.7	1.5	2.3
4	4	4	7.2	9.5	5.0	1.0	6.0	4.0	2.0	3.5	1.0	2.0	3.0
5	5	5	9.4	10.8	5.3	1.5	8.0	5.0	2.3	4.0	0.9	2.4	3.5
6	6	6	11.5	12.0	5.6	1.9	9.8	6.0	2.5	4.5	0.8	2.7	4.0
7	7	7	13.5	13.9	6.4	2.3	11.6	7.0	2.9	5.3	0.9	3.1	4.6
8	8	8	15.5	15.8	7.1	2.7	13.4	8.0	3.2	6.0	1.0	3.5	5.3
9	9	9	17.5	17.5	7.7	3.1	15.2	9.0	3.5	6.7	1.0	4.0	5.8
10	10	10	19.7	18.8	7.9	3.6	17.2	10.0	3.8	7.3	1.0	4.3	6.2
11	11	11	22.2	20.7	8.4	4.3	19.6	11.0	4.1	8.0	1.5	4.6	6.6
12	12	12	24.7	22.2	8.7	5.0	22.0	12.0	4.4	8.5	1.7	5.0	7.0

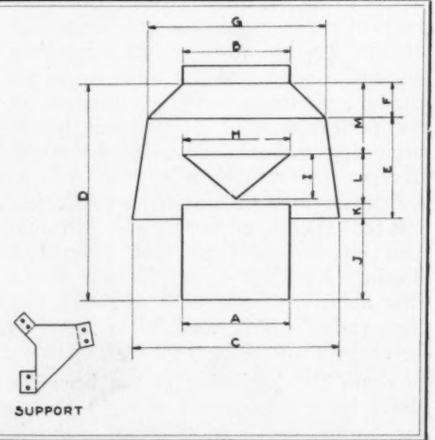


Fig. 6. Table of dimensions for cone type draft hood (inches). A. G. A. Laboratory design.

ducts and their percentage of excess air. Other factors, such as the design of the appliance, also affect the capacity of the flue outlet. All factors taken into consideration, it is probably best to utilize the lower figure (5,000 B.t.u. input capacity per square inch of flue collar outlet) as this figure represents a more practical one when all different types of appliances are taken into consideration.

It is common knowledge that the quantity of flue products produced by a given appliance is dependent upon the amount of gas burned, the percentage of

B. Pressure Drop

The increase in pressure drop through a draft hood, when air at 300 degrees F. is flowing through it at a rate of 90 cubic feet per hour per square inch of inlet area, and the outlet is capped, shall not exceed 0.002 inch water column.

(Continued on Page 28)

Pacific Coast Gas Association

Managing Director: Clifford Johnstone
Association Headquarters:
447 Sutter Street, San Francisco

President: H. L. Masser
Vice-President and Executive Engineer,
Los Angeles Gas and Electric Corp.

Schedule of Association Meetings in 1933

Northwest Conference

THE next general meeting of the Association will be the annual Northwest Regional Conference which will be held in Seattle, Washington early in June. Exact dates will be determined later. This meeting will be devoted to a discussion of the problems facing the gas companies in the Northwest states, including dealer cooperation, sales promotion, and competition. At this meeting the Production Committee of the Technical Section which is headed by C. P. Johnson of Bellingham, will make its final report.

Technical and Commercial Section Meetings

Prior to June a number of section meetings will be held. Guy Corfield, General Chairman of the Technical Section, will call a meeting of the Technical Section in Los Angeles for March 2 and 3. Meetings will be held in the Auditorium of the Los Angeles Gas and Electric Corp. Building at 810 South Flower Street, and will be devoted to a discussion of the proposed recommendations of technical committees and other matters of present interest to engineers. A notice containing the program will be sent out to members of the Technical Section about February 20.

A meeting of the Commercial Section will be called by F. U. Naylor, its General Chairman, for March 16 and 17, also in Los Angeles. This meeting will provide an opportunity to thoroughly discuss the studies now in progress by sub-committees of the Domestic and Industrial Sales Committees, and to guide these committees in the formulation of the recommendations which will be a part of their annual reports.

Convention

The success of the Natural Gas Exposition held in San Francisco in 1931, and its very definite influence in increasing gas appliance sales in the Bay District, has led to a study of the feasibility of repeating it in Los Angeles in connection with the Association's 1933 Convention. After a tentative survey of probable costs, President Masser addressed a letter to manufacturers asking their advice. The general tenor of the replies is adverse to holding an exposition during a year which holds so many uncertainties as to the trend of business as does 1933. All thought of having an exposition has therefore been abandoned.

The selection of an appropriate time and place for the convention is now being studied by D. L. Scott, General Convention Chairman, and a decision will be made at the next meeting of the Board of Directors.

PACIFIC COAST GAS ASSOCIATION

Honor Award

F. S. WADE

INITIATION OF FIRST PACIFIC COAST COOPERATIVE GAS ADVERTISING CAMPAIGN, 1929

In Appreciation of this Valuable Contribution to the Gas Industry, the Pacific Coast Gas Association has presented its author with the Association's Gold Medal, and in token of this award has caused this certificate to be inscribed.

PACIFIC COAST GAS ASSOCIATION

Newly issued P.C.G.A. Honor Certificate

Honor Certificates for Gold Medal Winners

PRESIDENT MASSER is responsible for an innovation in making award of the Association's Gold Medal which will make this highly coveted honor of even greater value to its recipients. A Certificate of Honor has been prepared which, in addition to bearing the name of the Gold Medal winner and description of his work, reads as follows:

> "In Appreciation of this Valuable Contribution to the Gas Industry, the Pacific Coast Gas Association has presented its author with the Association's Gold Medal, and in token of this award has caused this certificate to be inscribed."

Framed certificates have been prepared and delivered to all Gold Medal winners since the present rules of Award became effective in 1924. This Honor Roll is as follows:

R. M. Conner, Gas Appliance Testing Code —1924.
R. S. Fuller, Comparative Cost of High Pressure and Low Pressure Distribution—1924.
K. C. Tomlinson, Chairman of Committee on Naphthalene Removal, Technical Section—1924.
W. H. Barton, Chairman of Committee on Employees Relations with The Public, Public Relations Section—1925.
C. R. Miller, Gas Appliance Installation and Service Manual—1925.
J. E. Spelce, Chairman of Committee on Naphthalene Removal, Technical Section —1925.
E. L. Hall, Gas Manufacture for Peak Load Conditions—1926.
F. S. Wade, Initiation of First Pacific Coast Competitive Gas Advertising Campaign, —1929.
R. E. Fisher, Leadership in Promotion of Harmonious Trade Relations in all Branches of the Gas Industry and Coordinating Dealer and Utility Interests by Establishing a Definite Foundation upon which these allied Industries will hereafter work in harmony—1932.
J. A. Harritt, Co-author with L. J. Willien and Frank Wills of High Heating Value Oil Gas as a Stand-by for Natural Gas—1932.
R. A. Hornby, The Objectives and Funding of a Pension and Benefit Plan—1932.
Frank Wills, Co-author with J. A. Harritt and L. J. Willien of High Heating Value Oil Gas as a Stand-by for Natural Gas—1932.

Cooperative Advertising Progress Reports

We wish to call the attention of every one in the Gas Industry to the progress reports of the Association's Advertising Committee which will appear each month in *Western Gas* on a page separate from this department. This committee is doing a very splendid job for the gas industry by carrying our message direct to large gas users through their own publications by means of advertisements, technical articles on gas utilization, and news items. It is particularly important that salesmen and industrial gas engineers keep informed of the activities of the committee and assist by supplying

articles, news items and suggestions for future advertisements. A supply of reprints of each advertisement is being sent to each company participating in the cost of this advertising campaign so that they can be used in solicitations and as direct mail pieces.

Association Incorporation Completed

The proposal to incorporate the Association as a non-stock, non-profit corporation under the laws of the State of California having been approved by over two-thirds of the membership, Articles of Incorporation have been filed and accepted by the Secretary of State.

While in its corporate form the Association will continue to function in the same way as it has in the past; members are thereby relieved of a measure of liability risk to which they were subject before incorporation. The Association is indebted to Mr. Douglas Van Dyke of the legal department of the Los Angeles Gas and Electric Corp. for handling the legal phases of the incorporation.

New Publications

Engineering and Scientific Charts for Lantern Slides—American Standards Association, November 1932.

Gas and Electric Utilization Service Code—Pacific Gas and Electric Co., 1932.

The Doherty Washer Cooler—Sybren Ruurd Tymstra. Bulletin No. 67, Engineering Experiment Station, University of Washington.

Proceedings of the 1932 Convention, Canadian Gas Association.

Housing Objectives and Programs, and Home Ownership and Types of Dwellings, two volumes published by the President's Conference on Home Building and Home Ownership.

Antidote for Carbon Monoxide Poisoning

SUCCESSFUL use of methylene blue solution at several points on the Pacific Coast during late December and January in the treatment of carbon monoxide poisoning comes as news of first importance to the medical and gas professions.

About the middle of December, following tests at the University of California in use of methylene blue dye on animals asphyxiated with carbon monoxide, an order was issued by Dr. J. C. Geiger, director of public health for the City and County of San Francisco, calling for this treatment in all cases of carbon monoxide poisoning received in San Francisco emergency hospitals.

What is understood to be the first case of record in which the antidote has been successfully used in the treatment of human beings occurred on December 30 at Park Emergency Hospital, San Francisco. Allen D. Maybry, 54 years of age, had inhaled fumes of his automobile in his garage in a suicide attempt, according to newspaper reports, and was apparently dead for a half hour prior to the methylene blue injection. A meter reader found him and used artificial respiration for 30 minutes without reviving him. He was then taken to the hospital, an intravenous injection of methylene blue made, and heartbeats were noticeable within three minutes. In two more minutes the heart was beating audibly and in less than 10 minutes the patient's eyes opened.

Initial application of methylene blue in Los Angeles was made at the Georgia Street Receiving Hospital, four persons who had been overcome by fumes from gas heaters receiving injections on January 24. All of the victims had been rendered unconscious by carbon monoxide, the condition of one in particular being regarded as very serious. Two of the milder cases were released from the hospital soon after the treatment. Little hope was held for one of the cases, but this patient also revived later the same day.

An emergency injection of methylene blue was made in Pasadena, at the Pasadena Hospital, on January 29, the victim having been pronounced beyond the aid of ordinary antidotes. This patient regained consciousness 15 minutes after the injection. The patient had been suffering from a serious attack of influenza when overcome by carbon monoxide gas, and chemical analysis of his blood at the hospital showed that it contained the gas in a quantity ordinarily fatal.

On January 30 another victim of carbon monoxide fumes, Robert Brenk of Terminal Island, Calif., 49 years of age, was revived by a methylene blue injection after the inhalator squad of the San Pedro fire department had worked on him for two hours without success.

The use of methylene blue, according to information furnished *Western Gas* by Dr. Jacques P. Gray, assistant director of public health for the City and County of San Francisco, was first suggested in connection with treatment of cyanide poisoning. Its application for carbon monoxide poisoning is regarded in the experimental stage as far as humans are concerned. It is stated further that use of artificial respiration in connection with some of the San Francisco cases thus far treated with methylene blue should receive recognition.

Dr. Geiger of the San Francisco Department of Public Health suggests a 50 c.c. dosage of 1 per cent methylene blue solution in physiological salt solution, injected intravenously, to be repeated in from 15 to 30 minutes if necessary. The method of treatment for cyanide poisoning has been described by Dr. Geiger in an article appearing in the Journal of the American Medical Association for December 3, 1932. A second brief article has been prepared for early publication in the same journal, describing the use of the methylene blue in the carbon monoxide cases treated at San Francisco.

C. E. Rutledge

F. G. Merker

C. E. Rutledge Retires; Position Filled by F. G. Merker

CHARLES E. RUTLEDGE, district manager for the Southern Counties Gas Co.'s Orange County District since 1926, with offices at Santa Ana, Calif., has retired from service due to ill health. The Orange County position has been filled by Fred G. Merker, formerly district manager for the company's Ventura District, and at one time district commercial manager under Mr. Rutledge at Santa Ana.

Mr. Rutledge's retirement comes after more than a quarter of a century in the gas utility business. He became associated with the Southern Counties Gas Co. in 1919 when the company took over the gas properties in Santa Barbara which were then under the management of Mr. Rutledge. He retained the management of the properties under the new regime and held that position until 1926 when he was transferred to the company's Orange County District.

Mr. Merker is one of the company's youngest executives, beginning his service with Southern Counties in its Orange County District immediately following the World War.

Until a permanent successor has been selected to fill Mr. Merker's vacancy in the Ventura District, B. F. McBurney, for a number of years district superintendent for the properties there, will take over the managerial duties.

3-Company Campaign for Dealer Range Sales

Gas appliance dealers in Southern California during the next three months will be concentrating on sales of clock controlled gas ranges, as a result of a cooperative sales campaign being conducted jointly by the Southern California Gas Co., Southern Counties Gas Co. and Los Angeles Gas and Electric Corp. The campaign opened on January 30 and will extend for nine days, possibly to be continued should results warrant. The three companies are carrying special newspaper and posterboard advertising, and dealers are being contacted to insure general participation.

Michigan Gas May Be Brought to Saginaw and Bay City

Michigan Natural Gas Corp., headquartered at Mt. Pleasant, Mich., with M. Bliss Keeler of East Lansing, Mich., president, is planning to construct a gas transmission line from Central Michigan gas fields to Saginaw and Bay City, Mich.

Edison Electric Institute Organized

ORGANIZATION of the Edison Electric Institute, a new trade association of the electric light and power industry, was announced on January 12. A special meeting of the National Electric Light Association called for February 12 is expected to result in the dissolution of that organization, and the Association of Edison Illuminating Companies, a national technical organization, is also expected to be dissolved soon.

The new association comes into being as an answer to demands made by electric light and power leaders at the June 1932 convention of the N.E.L.A. that the industry free itself of all semblance of propaganda activities. The original group represented in the Edison Electric Institute comprises 85 per cent of the N. E. L. A. contributing membership.

Officers of the new association are:

George B. Cortelyou, president of the Consolidated Gas Co. of New York, president; William J. Hagenah, vice-president of the Byllesby Engineering and Management Corp. of Chicago, vice-president; Bernard F. Weadock, executive secretary; Edward Reynolds, Jr., treasurer of the Columbia Gas & Electric Corp., New York, treasurer. These officers now hold similar positions in the National Electric Light Association.

Twenty-four trustees constitute the governing board of the Institute, of which 22 have been named. They are the following:

B. C. Cobb, Chairman of the Board, The Commonwealth & Southern Corp., New York.
Floyd L. Carlisle, Chairman of the Board, Niagara Hudson Power Corp., Consolidated Gas Co., New York.
George B. Cortelyou, President, Consolidated Gas Co., New York.
James Simpson, Chairman of the Board, Commonwealth Edison Co., Chicago.
A. F. Hockenbeamer, President, Pacific Gas and Electric Co., San Francisco.
Edwin Gruhl, President, The North American Co., New York.
W. C. Baylies, President, The Edison Electric Illuminating Co. of Boston, Boston.
Harry J. Bauer, Chairman of the Board, Southern California Edison Co., Ltd., Los Angeles.
William Chamberlain, President, The United Light & Power Co., Chicago.
Frank D. Comerford, President, New England Power Association, Boston.
Alex Dow, President, Detroit Edison Co., Detroit.
Samuel Ferguson, President, The Hartford Electric Light Co., Hartford.
Philip G. Gossler, President, Columbia Gas & Electric Corp., New York.
C. E. Groesbeck, President, Electric Bond & Share Co., New York.
George H. Howard, President, The United Corp., Wilmington.
Thomas N. McCarter, President, Public Service Corp. of New Jersey, Newark.
George O. Muhlfeld, President, Stone & Webster, Inc., New York.
John J. O'Brien, President, H. M. Byllesby & Co., Chicago.
H. Hobart Porter, President, American Waterworks & Electric Co., Inc., New York.
George N. Tidd, President, American Gas & Electric Co., New York.
Herbert A. Wagner, President, Consolidated Electric Light & Power Co., of Baltimore, Baltimore.
John E. Zimmermann, President, The United Gas Improvement Co., Philadelphia.

In the Institute's constitution may be read the intention of its organizers to provide a means for the industry's self-discipline, particularly as relating to the release of full and accurate financial and other information, and to reasonable charges to operating companies for holding company services. The purposes and program of the organization are suggested in more detail in the following excerpts from a statement released after the January 12 meeting in New York, at which it was formally launched.

"The determination of the members of the Association to bind themselves to a rigid code of ethics is seen in a paragraph of the Constitution which provides that 'the Membership Committee, subject to the approval of the Board of Trustees and in accordance with resolutions which such Board may from time to time adopt, shall have jurisdiction and authority to consider and investigate the business practices of any company member and to expel, suspend or take any other disciplinary action against any member guilty of a violation of proper or ethical business practices, or for failure to furnish information as required.' It is stated that companies by virtue of becoming members of the Institute shall be deemed to have consented to the right of the Institute to impose such disciplinary action.

"Other important provisions of the constitution are the following:

1. The company members shall from time to time and not less than annually publish financial statements, including balance sheets, showing gross and net income, operating expenses and surplus accounts, which statements shall be certified to by independent firms of certified public accountants who shall have audited the books of the company.

2. All statements and data furnished to consumers, stock exchanges and stockholders; all information designated for public dissemination and all reports to governmental authorities shall be accurate and clearly indicate their source.

3. All contracts between any member companies which involve the furnishing of management, supervisory, purchasing, construction, engineering or financing services to operating electric utility companies shall be so drawn and so operate in practice that the charges to the operating company shall be reasonable and commensurate with the value of the services rendered and the fair cost thereof to the company furnishing the services.

4. Company members from time to time shall answer such questionnaires relative to their organization, financing, methods of operation and business practices as may be requested by resolution of the Board of Trustees.

"The objects of the Edison Electric Institute as set forth in the constitution are:

1. The advancement in the public service of the art of producing, transmitting and distributing electricity and the promotion of scientific research in such field.

2. The ascertainment and making available to the members and the public of factual information, data and statistics relating to the electric industry.

3. To aid its operating company members to generate and sell electric energy at the lowest possible price commensurate with safe and adequate service, giving due regard to the interests of consumer, investor and employee.

"The membership is divided into four classes: operating company members, holding company members, individual members who will be officers or employees of company members, and honorary members. After April 1 of this year new companies will be admitted to membership after approval by the Board of Trustees of an application which sets forth full information with reference to its organization, properties, financial structure, affiliations and business practices."

1933 Calendar

February

7th Mid-West Regional Gas Sales Conference—Hotel Sherman, Chicago, Ill., Feb. 14-15, 1933.

3rd Southwest Natural Gas Sales Conference—Baker Hotel, Dallas, Tex., Feb. 24-25, 1933.

March

Pacific Coast Gas Association—Technical Section Meeting, Los Angeles Gas and Electric Corp. Bldg., Los Angeles, March 2-3, 1933.

Eastern Natural Gas Regional Sales Conference—Hotel Schenley, Pittsburgh, Pa., March 2-3, 1933.

Oklahoma Utilities' Association—15th Annual Convention, Oklahoma City, March 7-8, 1933.

Pacific Coast Gas Association—Commercial Section Meeting, Los Angeles, March 16-17, 1933.

April

Missouri Association of Public Utilities—Elms Hotel, Excelsior Springs, Mo., April 27-29, 1933.

May

Southern Gas Association—25th Annual Convention, Hotel Shoreham, Washington, D. C., May 2,3,4, 1933.

Commercial Section, American Gas Association—Southern Regional Gas Sales Conference, Hotel Shoreham, Washington, D. C., May 2,3,4, 1933

Natural Gasoline Association of America—Annual Convention, Tulsa, Okla., May, 1933.

American Petroleum Institute—Mid-Year Meeting, Tulsa, Okla., May 17, 18, 19, 1933.

June

Pacific Coast Gas Association—Northwest Conference, Seattle, Wash. Early June, date to be selected.

September

Canadian Gas Association—Annual Convention, Ottawa, Can., Sept. 18, 19, 1933.

American Gas Association—15th Annual Convention, Chicago, Ill., week of Sept. 25, 1933.

October

American Petroleum Institute—14th Annual Meeting, Chicago, Ill., Oct. 24-26, 1933.

Texas Cities Gas Co. Completes $180,000 Replacement Program

Texas Cities Gas Co., Galveston, Texas, in December completed an $180,000 replacement program, begun early in the year, according to D. E. Nichols, general manager for the company. The work involved replacement of pipe in all sections of the city.

Important Sales Meetings Due, Feb.-March

DURING February and early March the American Gas Association Commercial Section is conducting another of the series of Regional Sales Conferences which have proven so valuable in the past several years. The meeting schedule is as follows:

Midwest

February 14 and 15—Seventh Midwest Regional Gas Sales Conference, Hotel Sherman, Chicago

Chairman Midwest Regional Gas Sales Council, Stanley Jenks, Northern Indiana Public Service Co., Hammond, Indiana

Southwest

February 24 and 25—Third Southwest Natural Gas Sales Conference, Baker Hotel, Dallas, Texas.

Chairman Southwest Natural Gas Sales Council, C. K. Patton, Dallas Gas Co., Dallas, Texas

Eastern

March 2 and 3—Eastern Natural Gas Regional Sales Conference, Hotel Schenley, Pittsburgh, Pa.

Chairman Eastern Regional Natural Gas Sales Council, B. H. Gardner, Columbia Engineering & Management Corp., Columbus, Ohio.

Programs of the above sales conferences come under the work of the commercial section of which J. W. West, Jr., is secretary. In advance of the conference sessions the respective sales councils meet to determine upon the type of programs to be offered, in line with the needs of each section.

The tentative program for the Midwest Regional Gas Sales Conference was covered in *Western Gas* for January, together with membership of the Midwest Regional Gas Sales Council. All of the conference programs will give considerable place to selling of ranges against present competition. The Southwest meeting among other topics will consider the following: Range and water heater sales, both from utility and manufacturer viewpoints; symposium on sale of major heating equipment, participated in by six utility and manufacturer speakers; gas refrigeration; servicing and its relation to sales; maintaining customers and revenues.

Speakers on the Southwest program will include many of the members of the Southwest Natural Gas Sales Council which consists of:

C. K. Patton, Chairman, Texas Cities Gas Co., Dallas, Texas.
R. C. Anderson, Mississippi Power & Light Co., Jackson, Miss.
E. N. Avegno, New Orleans Public Service, Inc., New Orleans, La.
J. A. Bell, Kansas Power & Light Co., Salina, Kan.
J. J. Brennan, Memphis Power & Light Co., Memphis, Tenn.
Q. R. Dungan, Cities Service Gas Co., Bartlesville, Okla.
H. L. Mann, Texas Gas Utilities Co., Del Rio, Tex.
A. E. Higgins, Secretary, Natural Gas Department, Dallas, Tex.
L. G. May, Albuquerque Natural Gas Co., Santa Fe, N. M.
Carl J. Minnig, Phillips Petroleum Co., Bartlesville, Okla.
J. F. Orr, United Gas Public Service Co., Houston, Tex.
F. M. Rosenkrans, Gas Service Co., Kansas City, Mo.
R. E. Sivley, San Antonio Public Service Co., San Antonio, Tex.
Carl Trevitt, Community Natural Gas Co., Dallas, Tex.
E. C. Whitcomb, Lone Star Gas Co., Fort Worth, Tex.
C. B. Wilson, Little Rock Gas & Fuel Co., Little Rock, Ark.
W. Jennings Young, Oklahoma Natural Gas Corp., Tulsa, Okla.

The Eastern Natural Gas Regional Sales Conference will feature such topics as: New aids in selling industrial gas; Utility advertising today; Competition in commercial Sales; What utility cooperation means to the heating contractor; Employee selling; Application of circulated air heating to industrial gas installations; as well as other papers on central heating and gas refrigeration. Membership of the Eastern Regional Gas Sales Council consists of the following:

B. H. Gardner, Chairman, Columbia Engineering & Management Corp., Columbus, O.
F. B. Jones, Equitable Gas Co., Pittsburgh, Pa.
E. E. McCormick, Peoples Natural Gas Co., Pittsburgh, Pa.
Robert Montgomery, Louisville Gas & Electric Co., Louisville, Ky.
P. L. Mulkin, United Natural Gas Co., Oil City, Pa.
R. E. Polk, Equitable Gas Co., Pittsburgh, Pa.
W. F. Reid, The Manufacturers Light & Heat Co., Pittsburgh, Pa.
S. B. Severson, Republic Light, Heat & Power Co., Buffalo, N. Y.
B. H. Smyers, Equitable Gas Co., Pittsburgh, Pa.
F. H. Stone, Equitable Gas Co., Pittsburgh, Pa.
T. E. Wood, The Manufacturers Light & Heat Co., Pittsburgh, Pa.

Washington Bill Proposes 5% Tax on Municipal Utilities

Senate Bill No. 57, introduced in the 1933 session of the Washington State Legislature by Senators Gray and Heffron, provides that every municipal corporation shall annually for the privilege of exercising its franchise right to own or operate a utility, pay a tax based on the gross earnings at the rate of five per cent. The proposed act has been referred to the committee on revenue and taxation, and further provides as follows:

Allows the following deductions: (1) all revenues derived from tax levy sources, from bonds and securities of the United States, the State of Washington or any municipal corporation of the state; and (2) a reasonable allowance for depreciation, provided such depreciation has been charged off.

Requires an annual report to be made not later than March 15 of each year, beginning with 1933, by each municipal corporation, setting forth the gross earnings of each utility. Failure to make the report authorizes the Commission to make an estimate of the gross earnings for the basis of computation of the tax.

Requires the report to be made in the manner prescribed by the Commission and to be verified by the mayor or other executive officer. Makes it a misdemeanor for an officer to knowingly make a false or fraudulent report.

Weather Information Given to United Gas Consumers on Office Chart

The United Gas Public Service Co. has installed a chart for recording daily minimum temperatures and other information concerning weather conditions in the vicinity, in some of its district offices, according to Ray N. Franklin, manager for the company at Aransas Pass, Texas. The purpose of the chart is to give consumers a picture of past weather conditions which have affected heating requirements in their homes during the winter months. A thermometer designed to show the range of temperatures for house heating, is reproduced on the side of the chart.

The daily minimum temperatures are shown by a curved line running across the chart. Another line drawn in a different color, gives a comparative record of daily temperatures for the same period a year ago. A new chart will be posted every month.

Edwin Gruhl Dies; No. Amer. Light Presidency to J. F. Forgarty

Edwin Gruhl, recently elected president of North American Light and Power Co. after the death of former president Clement Studebaker, Jr., passed away on January 22 from heart disease. Mr. Gruhl, in addition to the presidency of North American Light and Power, was a director and officer in more than 30 other companies. James F. Forgarty of New York, vice-president of the North American Co., was named on January 30 as president of North American Light and Power Company.

Dokenva Gas Corp. Buys 500,000 Acres of Oil and Gas Land

The Dokenva Gas Corp., a Henry L. Doherty Co. subsidiary, has completed purchase of more than 500,000 acres of oil and gas land leases in eastern Kentucky, according to press reports. Assets of the Eastern Kentucky Natural Gas Co. were acquired in the deal. The total purchase price is reported to be approximately $350,000.

Plan to Serve Six Illinois Communities

Central Illinois Natural Gas Co., Elmwood, Ill., plans to spend $114,850 in extending a natural gas pipe line to six communities in Illinois, including New Berlin, Ashland, Petersburg, Tallula and Pleasant Plains. The company's application is pending before the Illinois Commission.

Payette, Weiser and Boise City May Be Served

Consolidated Oil Co., Independence, Kan., is planning construction of a gas line from its wells in the Payette-Weiser district to serve the towns of Payette and Weiser and to extend to Boise City. Work will begin in the Spring.

Death of E. P. Driscoll Announced

E. P. Driscoll, plant superintendent of the Amarillo Gas Co., Amarillo, Texas, died recently following an operation. Mr. Driscoll was 31 years of age, and had worked in practically every department of the gas company since becoming affiliated with it in 1920.

N. M. Corporation Commission Has No Jurisdiction Over Utilities

A recent decision of the Supreme Court of New Mexico held that the state corporation has no jurisdiction over rates of gas and electric utilities. The state constitution gives it power to regulate and control the rates of "railroads, express, telegraph, telephone, sleeping car and other transportation and transmission companies and common carriers." The decision stated that "we are unable to persuade ourselves that the constitution makers meant to include local gas and electric light companies under the phrase 'other transmission companies'."

P. G. and E. Co. to Supplement "Natural" With High B. t. u. Oil Gas

Pacific Gas and Electric Co., San Francisco, is prepared to supplement its natural gas service with high B.t.u. oil gas in its plants at Sacramento, Stockton, San Raphael, Vallejo, Oakland, San Francisco, and Modesto. Changes in plant equipment and routine have been effected to place plants in shape to manufacture this gas, should occasion demand. The process for manufacturing high B.t.u. oil gas was described in the august issue of *Western Gas* in a paper by J. A. Harritt, Frank Wills, and L. J. Willien.

"Deviation of Natural Gas from Boyle's Law" Subject of T. P. 539

The United States Bureau of Mines in December brought from the press Technical Paper No. 539, on "Deviation of Natural Gas from Boyle's Law," by T. W. Johnson and W. B. Berwald. The booklet contains 29 pages and 7 illustrations. Technical Papers 131 and 158 gave data for relatively low pressures. In the present work the pressures are of ranges found in high-pressure natural gas transmission lines and in underground reservoirs.

J. P. Saunders New District Manager for United at Huntsville

J. P. Saunders has been named district manager for United Gas Public Service Co. at Huntsville, Texas. The Huntsville district is composed of Riverside, Trinity, Groveton, Lovelady, Crockett, Elkhart and Grapeland.

Contract Let for Nashville Line

Contract is reported let to the Southern Engineering and Appraisal Co., Nashville, Tenn., by the Standard Gas Co., Inc., for supervision of construction of a 30-mile, 8-inch line from the Dickson County gas fields to Nashville.

Walnut Valley P. L. Co. Asks Permit

The Walnut Valley Pipe Line Co. has applied to the Kansas Commission for permission to extend its pipe line system to serve customers outside the city limits of Arkansas City, Kan.

Kansas Pipe Line Rate Cut Enjoined

A THREE-JUDGE federal court on January 5 handed down a decision enjoining the Kansas Public Service Commission from enforcing upon the Cities Service interests its order to reduce pipe line rates approximately 25 per cent. The opinion was written by Judge Orie L. Phillips of the U. S. Circuit Court of Appeals, and concurred in by Judge George T. McDermott of the U. S. Circuit Court of Appeals. Judge Richard J. Hopkins, Federal District Court Judge, the third member of the three-judge court, handed down a dissenting opinion nine days following the reading of the majority opinion.

Following are some of the major points in the majority opinion, the court holding:

That the 40-cent gas rate charged the distributing companies by the pipe line company was a fair rate and should stand.

That the commission's order reducing the city gate rates from 40 to 30 cents was invalid.

That the valuation placed on the Cities Service Gas Co. by the Kansas Public Service Commission was unfair.

That the net available annual return from the property was only $5,860,327 instead of $7,161,793 as held by the commission.

That the 40 cent gate rate would produce a return of only 7.03 per cent when the company could justly claim the right to earn 8 per cent.

That the commission was in error in disallowing the cost of the gas fields in their valuation which the company had acquired for the purpose of assuring an adequate supply of gas to the consuming public.

That the commission had the right to make an investigation and to regulate rates of pipe lines for the purpose of determining local rates.

Final Mixed Gas Research Report Issued

A FINAL summary report on the mixed gas research program carried on for the past five and one-half years at the American Gas Association Laboratory under the direction of the Committee on Mixed Gas Research of the Technical Section, has been published as Report No. 689. The information presented in the final bulletin is divided into three principal parts, namely, Part I. "Utilization of Various Mixtures of Natural Gases and Modified Manufactured Gas", Part II. "Formula for Determining Limits in Mixing City Gases", and Part III. "General Summary of Results of Entire Investigation."

Approximately 175,000 separate tests and determinations using 250 different gas mixtures were included in the investigation. The report concludes with a summary which brings out the salient points disclosed by the study, discussing (1) variations in factors of gas service with domestic and similar industrial appliances, including variations in specific gravity, heating value, chemical composition, and gas pressure, (2) variations in gas service with industrial appliances, and (3) utilization of butane, including the use of butane-air and butane-enrichment of various gases.

Philip O. Deitsch Resigns from A. G. A. Staff

D. B. Stokes, chairman of the Manufacturers' Section of the American Gas Association, announces the resignation of Philip O. Deitsch, manager of group activities of the Section, effective February 1, 1933. Mr. Deitsch is leaving the employ of the Association to engage in his own business of trade association management.

It is not contemplated that the position held by Mr. Deitsch will be filled for the balance of the association year. Correspondence regarding group activities should be directed to Group Activities, Manufacturers' Section, American Gas Association, 420 Lexington Ave., New York, N. Y.

Gas Utilities Co. Takes Over Midwestern Oil and Gas

Gas Utilities Co., according to announcement late in January has acquired control of the Midwestern Oil and Gas Co., Okmulgee, Okla., and will assume operating management at once. The Midwestern company was organized in September, 1929, by a group of Okmulgee oil and gas men. At that time, it took over the properties of Colton and Lester and drilled several gas wells in Pittsburg, Coal, Latimer, Haskell, Muskogee and McIntosh counties. Present holdings comprise several thousand acres of leases on the well known structures in these counties. There are several gas wells on the holdings of the company in the Quinton, Red Oak, Warner and adjacent fields.

Franchise Tax Declared Invalid By Montana Utilities Commission

A section providing a franchise tax on natural gas service in Baker, Mont., has been declared inoperative by the Montana Public Service Commission on the ground that it "discriminated against users of the gas service." The section of the company's franchise provided a franchise tax of one per cent on gross receipts of from $10,000 to $15,000; two per cent from $15,000 to $20,000; three per cent from $20,000 to $25,000, and five per cent above $25,000.

Ramsey Petroleum to Build Natural Gasoline Plant

Ramsey Petroleum Co., Oklahoma City, Okla., plans construction of a natural gasoline plant at its St. Anthony well in N. E. Colorado. A flow of 6,500,000 c.f. of gas has been developed. Additional plans for the utilization of the gas call for serving natural in Fort Morgan, Greeley, Sterling, New Raymer and Buckingham.

MEASUREMENT and CONTROL

Can We Improve the Domestic Gas Meter?

By LEE HOLTZ
*Superintendent of Manufacture & Distribution, Southern California Gas Company**

IN these days of mass production, mass consumption, and large business organizations comprising huge aggregations of units under a single management, intense competition for retail customer outlets is the order of the day and now as never before is scientific distribution of product recognized as a vital necessity in the conduct of business by our large retail merchandising institutions such as the department stores, chain store systems, etc. We as gas companies, distributing our product to the general public, also fall in this same class. It would therefore seem desirable for us to pause for a moment to take stock of ourselves as an industry and scrutinize from at least one angle our distribution practice as a large retail merchandiser of an essential commodity.

Lee Holtz

It is perhaps no exaggeration to say that probably without exception in every present day large modern retail merchandising establishment, such as our large department stores, the cash register is considered one of the essential operating facilities, so essential in fact that in its make-up the very highest type of mechanical construction is employed and the device is prominently displayed before every customer's gaze so that he or she may see that his purchase has been officially recorded.

Now the gas company is essentially a large retail merchandiser occupying a place similar to the department store in our social structure. In our case the gas meter occupies a somewhat similar relationship, though not precisely so, as the cash register, and while our gas meter is not so conspicuously displayed as the department store cash register it is an element just as essential, if not more so, in our business as the cash register is in theirs. However, there is a distinctive peculiarity about the meter element in the gas business which lies in the fact that any deviation from perfect functioning or accuracy of registration of the meters on the customers' premises directly affects the income of the company and may affect our relations with the customer. In fact under present conditions the meter may be said to be in sole control of the gross revenue from gas sales. This fact is not true of any other major element in the gas company's operations.

Domestic gas meters used today, known as the "dry type," have been in use by gas companies throughout the world for 89 years. Except for minor improvements in construction, and in the increase of capacity, it is much the same as the two-diaphragm slide-valve meter invented by Richards in 1843 and improved by Thomas Glover several years later. The fundamental principle of its operation has been so sound that it has remained unchanged throughout the many years of its use. The Bureau of Standards at Washington, D. C., states that the gas meter is one of the most reliable of measuring instruments.

I believe that the gas companies and their customers are enjoying, as a whole, satisfactory measurement and therefore it is not the purpose of this paper to advocate a change in principle of the present day domestic meter operation. However, due to the fact that the average continuous period of accuracy of a domestic meter on the customers' premises is approximately 5 to 10 years and that at this point it is removed from the customer's premises, put through the shop and tested and repaired at some little expense, serious thought should be given to the matter of increasing this period of accurate registration of the meter. It is believed, therefore, that if longer periods of sustained accuracy could be realized from the use of better materials and higher standards of workmanship in gas-meter construction such would be justified if the necessarily increased first cost could be offset by satisfactory reduction in cost of maintenance.

In my opinion there has never been a time in the history of the gas business when it was more essential that good public relations be secured and preserved than at the present time. It seems to me that the gas meter, as the gas company's cash register, so to speak, should be given its proper place in this connection. The customer most certainly is extremely interested in anything that tends to loosen his purse strings, and while he does not know or perhaps care in the least about the principle or mechanism of the meter under his house, he is concerned about its accuracy and questions that subject probably more than in any other service he is rendered. Nor does he know or realize the expense the companies are put to in giving him accurate measurement.

Let us go back 20 years, and picture the materials and construction of the gas meter. In comparing them with the present day construction we find comparatively little change. To be sure, there have been some changes in design and adjustments, and perhaps a little heavier material is now used in some parts, but in view of the rapid strides of modern science and mechanics as developed in the automobile, radio, electric meter, cash register, etc., the improvements have been comparatively small and few. The most noticeable change perhaps was made when the construction was changed from a wet to a dry meter 27 years after the invention of the wet gas meter, 116 years ago this year. The reason for the few changes may have been because price consideration came before anything else.

It may be interesting to compare the operating characteristics of the meter used by gas companies for service on customers' premises with the meters used by companies supplying domestic electric service.

In the case of the gas companies the Railroad Commission of the State of California does not recognize routine or other tests made on gas meters on customers' premises with a portable standard meter, but stipulates that the meter must be removed from the customer's premises and brought to the meter shops and tested on an approved meter-prover at least once in every seven years. Experience seems to show that the average period of continuous accurate registration is approximately five to seven years.

In the case of the electric companies the Railroad Commission recognizes tests made on the customer's premises with a portable standard meter and does not require removal to the shop for periodic tests. Some of the large electric companies make these tests on domestic customers' premises at intervals approximating five or six years at which time necessary minor replacements and repairs are made. Meters requiring major repair work are removed and sent into the shop. In many cases meters remain on customers' premises for periods exceeding 10 years.

Now our brothers in the electric end of the public utility business have achieved such a satisfactory performance in their domestic electric meter that I think it will be worth our while to examine into the constructional features of the electric meter and compare them with those of our gas meter.

First of all it will be noticed that the electric meter is a fine piece of mechanical construction. It is built of the very finest materials obtainable, made up into parts constructed of micrometer precision, and assembled into a mechanism that runs with the accuracy of a high grade watch. The moving element is fitted with special alloy steel pivots running on diamond jewel bearings. In short the instrument is the last word in reasonable mechanical excellence as is applicable to mass production of a large number of units commercially suitable for mass consumption. And the selling-price is consider-

*Presented before the Pacific Coast Gas Association's Organization Conference, San Francisco, Calif., December 14-15, 1932.

ably less than that of the price of the gas meter. In explanation of these characteristics of the electric meter it may be said that the conditions under which it operates are much more favorable than those attending the operation of the gas meter. But is such necessarily the case? It is true the electric meter is not subject to dust and moisture in the electric current, but it is subjected to a number of other conditions which may be just as trying, such as:

1. Distorted sine waves.
2. Excessive voltage.
3. Short circuits.
4. Grounds.
5. Lightning strokes.
6. Line surge harmonics, etc.

However the electric meter has been perfected to the point where it is very successful in withstanding these unfavorable conditions which are inherent in every electric distribution system and liable to occur at any time.

Concerning the gas meter, probably it would not be feasible to use jewel bearings, etc., but micrometer fits in joints and bearings might be used within reason. At any rate, to any one familiar with the details of construction of domestic gas meters it must be apparent that many constructional features are quite evidently susceptible of improvement such as:

1. Cases.
2. Tube screws
3. Bearings
4. Diaphragms
5. Stuffing-boxes
6. Lubrication
7. Indexes
8. Gear ratios
9. Miscellaneous materials used and design of parts.

It is true that during the last several years a number of improvements have been made concerning these parts, but I am of the opinion that there remain possibilities for further improvement which would no doubt receive attention from the meter manufacturing companies if we as operating companies let them know that the purchase price is not our first and only consideration.

During the last few years such important strides have been made in mechanical engineering, such astounding advancement has occurred in metallurgy—the development of cadmium plating, chromium plating, etc., special alloy steels of great strength and corrosion resisting characteristics, the refinement of methods of construction and machining of metal parts, use of die-castings—all these and many other developments make so many improvements probable now that were not even possible formerly, that as one looks over the field of what has been accomplished in the evolution and development of the mechanics of materials and methods, it seems as if there is almost no limit to the possibilities of still further improving our gas meter.

I think our meter really deserves more refinement in its manufacture. We should be able to feel proud and justified in referring to it as an example of fine engineering and mechanical excellence exemplified in a measuring instrument used in the merchandising of an essential commodity to the general public.

When discussing proposed desirable changes in the construction of the meter let us take an ordinary gas meter and consider the work it has to do. During a given period, say of six years, the average domestic house meter will have passed approximately 300,000 cubic feet. This means that approximately 2,000,000 revolutions of the moving element of the meter will have been made, which certainly means considerable duty on bearings and diaphragms. Also we must keep in mind that gases may contain dust or moisture. These are found in natural as well as manufactured gas to a greater or lesser extent and in spite of the fact that mostly clean natural gas is now distributed, scrubbed and cleaned at its source, small quantities of entrained dust and moisture may be present even then. Dust and moisture may increase friction and so be detrimental to the moving mechanism of the meter. Friction is certainly a factor in the operation of the mechanism of all present types of gas meters and should be reduced to minimum as has been done in the modern electric meter. Working parts must therefore be protected from entrained dust and moisture wherever feasible. Neat, close-fitting joints should be used where practicable. If there were less lost motion to contend with, improvement in life accuracy would be realized. If the entire meter were constructed of more suitable materials and with a higher class of mechanical workmanship I believe there would be less wear. Also, if it were set up so there would be no side twisting and bending in the moving elements I think it would register accurately for longer periods.

I would also suggest that some thought be given to the practice of bringing the meters to the shop for testing and repairs. I think that the testing might be done on the customers' premises with a portable standard instrument. I have no doubt that if a gas meter of satisfactory accuracy and operating characteristics, designed for use as a portable standard instrument, were devised and proved capable of being calibrated to a degree of precision comparable to the electric portable standard meter the regulatory commission would approve it. This device could be so designed and constructed as to eliminate any reasonable probability of inaccurate tests and should therefore then be acceptable to the regulatory commissions.

Another feature which should be given consideration is the fact that oftentimes meters are brought in after a 6- to 10-year period for testing and repairing even though they have been idle or have passed only a few thousand cubic feet. For example, a meter that has been in one house for six years may have passed 36,000 cubic feet per year or a total of 216,000 cubic feet. Another meter may have been in the house next door for the same period of time, but may have passed only 108,000 cubic feet during that time. No distinction is made between the two and they are both brought in regardless of the fact that one has passed twice as much gas as the other. If the meter were so constructed as to last longer, it seems to me that the periodic tests on the customers' premises with such a portable standard instrument would enable us to know just how accurate the meter was and whether or not it would be advisable to leave it in place longer. For instance if a meter were so constructed as to be able to furnish continuous periods of accurate registration of 15 years, periodic tests every three or five years on the customers' premises would give us the information necessary to determine when repairs were required. It is generally known that the less a meter is disturbed the better it functions, since then there is a minimum liability to injury during handling, transportation and setting.

It is believed in many cases improvements could be made in the design and selection of materials for the bearings and other parts which may wear and develop lost motion to an extent affecting the accuracy of the meter. In designing improvements to gas meters it must be remembered that in addition to being able to withstand conditions encountered on the customers' premises both internally, due

Sixth S.C.M.A. Hi-Jinks Attended by 289

SATURDAY afternoon and evening, January 28, were important dates for the Southern California Meter Association. For the sixth successive year the organization held its annual Hi-Jinks, meeting again this year in the club rooms of the Central Manufacturers' Club, located in the Administration Building of the Central Manufacturing District in Vernon, Calif.

At the Rio Hondo Country Club one of the S. C. M. A. monthly tournaments took place, commencing at 1:30 Saturday afternoon. Between 30 and 40 golfers turned out for the event, and at the conclusion of the tournament adjourned to the Hi-Jinks. The tournament was in charge of A. E. DeBurn.

This year's Hi-Jinks drew the largest attendance yet recorded at these affairs, 289 paid admissions being sold according to L. P. W. DesBrisay, president of the S.C.M.A. Club rooms were open at 6:00 p. m., dinner being served about 8:00. A floor show was staged as conclusion to the evening, made up of vocal and dance numbers.

J. A. Smith of the Texas Co., chairman of the Association's entertainment committee, was in charge of dinner and entertainment arrangements for the evening. Much of the responsibility for the arrangements was assumed by an efficient committee of associate members, made up of A. E. DeBurn, Southwest Welding and Equipment Co.; K. C. Tomlinson, Pacific Meter Works; J. J. Delaney, Reliance Regulator Corp.; and B. O. Bushnell, Neilan Co. Mr. Smith and the above named associate members deserve a large share of credit for what is generally voted to be the best Hi-Jinks yet conducted by the Association.

to possible dust and moisture in the gas, and externally, due to possible interference and mechanical injury from curious, careless or malicious persons, it also has almost every conceivably possible unfavorable condition to contend with such as possible injuries incident to transportation, handling and setting, and that therefore in no case would it be permissible to sacrifice robustness of construction to refinement of detail.

The following possibilities are suggested.

1. Better designed bearing surfaces.
2. The use of other materials than those at present used.
3. Replacable bushings and pins.
4. Roller and ball bearings in larger meters, together with means provided for lubrication.
5. Means to protect bearing points from dust and foreign matter entrained in the gas.
6. Reduction in number of bearing points through rearrangement of mechanism.

The psychology attending improvement of the gas meter has been a difficult matter in that the gas companies are the ones most able, from their experience, to indicate the desirable changes that could be made. The meter companies are not at fault, because they are looking to the gas companies for guidance in adopting improvements and are most certainly willing to put a better product on the market if there were sufficient demand for it. The gas companies as a whole have not made it evident enough to the meter companies that something better in the line of meter construction is desired. As stated before, the present mechanical principle of operation is sound and satisfactory in general, but the construction should and could be better. It is therefore up to the gas companies to demand a better constructed meter, and the meter companies will see that they get it.

In conclusion I wish to say that these suggestions do not apply exclusively to any particular make of either tin or iron meters but to the construction features of the products of the principle meter manufacturing companies which at present have meters in the market.

Vancouver Gas Plant Near Completion

CONSTRUCTION is now practically completed on the new gas plant of the B. C. Electric Railway Company in Vancouver which will commence service during the month of February. The addition of this plant to the existing facilities of the gas utility will make it the third largest in Canada, and permits an increased gas output of three million cubic feet, requiring a coal consumption of 70,000 tons annually and producing coke by-product at the rate of 35,000 tons yearly. With full operation the new plant and existing facilities will consume 100,000 tons of coal per year.

Six acres were required on which to erect the plant and additional wharfage of 375 feet frontage has also been erected to handle coal scows. Development was started November 1, 1931, and the final details to the plant will be completed by the first of March, although it is hoped that operation will have started before this date.

Coal will be brought to the works in barges from Vancouver Island. It will be handled from the scows by an electrically-operated jib crane, which discharges into either a series of reinforced concrete blending bunkers or into the yard storage.

Four benches of chamber ovens constitute the main unit of the plant, each containing six chambers with recuperators for gas and oil. Each chamber has a carbonizing capacity of 7.2 tons of coal a day, or a total of 172.8 tons per day.

Coke from the chambers will be discharged into an electrically operated hot coke car which will be hauled underneath the quenching tower from where the coke will be elevated to sorting screens and bunkered.

Two waste heat boilers have been installed. The producer plant consists of two steam boiler jacketed mechanical producers fitted with automatic feed and ash discharge. Two condensers of 3,000,000 cubic feet capacity per day have been provided for use with False Creek salt water.

The auxiliary plant consists of two exhausters, two tar extractors, two washer scrubbers, one naphthalene washer and a battery of cast iron purifiers, each with a capacity of 3,000,000 cubic feet per day.

Total sendout capacity of the company is increased to 9,000,000 cubic feet daily by addition of the new plant.

Plan Line to Augment Gas Service to Indiana Towns

The Indiana Southwestern Gas Co., Vincennes, Ind., plans to construct a natural gas pipe line from the Glendale and Hudsonville gas fields to connect with the company's line which serves Washington, Vincennes, Princeton, Evansville and other towns. The line will be about 10 miles long, of 4-inch pipe.

Waterloo Extension May Get Under Way This Spring

Natural Gas Pipe Line Co. of America, Chicago, is reported planning to begin construction of its Waterloo extension within 60 days. The line will extend from the Texas-Chicago 24-in. line to Waterloo, via Marshalltown and Grinnell, serving several other towns en route.

Ask Legislation to Change Utility Regulation in State of Georgia

A resolution has been introduced in the city council, Atlanta, Ga., which would ask the next Georgia General Assembly for enactment of legislation giving all municipalities of 200,000 or more population in the state authority to regulate rates and services of gas companies, and other public utilities.

No Meter Short Course at Norman, Okla., in 1933

W. R. McLaughlin, superintendent of measurement for the Arkansas-Louisiana Pipeline Co., Shreveport, La., and chairman of the general committee in charge of the Southwestern Gas Measurement Short Course held annually at the University of Oklahoma at Norman since 1924, announces that the Short Course will be omitted this year. Inability of manufacturers to provide the usual equipment and instruction is given as explanation for this decision. The Course will be held in 1934 if conditions warrant.

Addison B. Day Heads All-Year Club of Southern California

Addison B. Day, president of the Los Angeles Gas and Electric Corp., Los Angeles, Calif., was elected president of the All-Year Club of Southern California at its annual meeting. Mr. Day is also campaign chairman of the Los Angeles Community Chest.

Public Service Co. of Colo. to Spend $250,000 in 1933

Public Service Co. of Colorado, Denver, Colo. is planning to spend about $250,000 on new construction during the year 1933. According to Geo. Wehrle, distribution engineer for the company, this is a blanket budget for meters, regulators, mains and services and such replacements as are necessary.

Santa Maria Gas Employees Hear Line Construction Talk

The "Gas Meeters Club" of the Santa Maria Gas Co., Santa Maria, Calif., met recently to listen to an illustrated talk by A. F. Bridge, vice-president in charge of operations of the Southern Counties Gas Co. Mr. Bridge dealt with transmission line construction in the San Joaquin valley, covering in detail the Southern Fuel project. W. P. Dawe, in charge of personnel for the Southern California Gas Co., assisted in showing of the views.

Begin Engineering Work on Gas Transmission Line to Lubbock

According to word received late in January from John W. Moore of the John W. Moore Construction Co. and the Lubbock Gas Co., engineering work was begun on January 3 on the pipe line for the transportation of natural gas from the Hobbs field in New Mexico to Lubbock, Texas, a distance of 120 miles. The line will be constructed of 8-inch welded pipe.

Roy A. Zeigler Passes

Roy A. Zeigler, in charge of the gas industry department of the Century of Progress Exposition at Chicago, Ill., died recently at Jacksonville, Fla.

New Manager at Crowell, Texas

V. O. Smith has been named manager of the Texas Natural Gas Co. at Crowell, Texas, taking the place left vacant by the death of Z. W. Smith.

P. G. and E. Now Has 16 Wells in Buttonwillow Tied Into System

Pacific Gas and Electric Co., San Francisco, Calif., has completed its natural gas connecting lines in the Buttonwillow field and has tied 8 wells into the system. With this work completed, 16 wells are finished and available for gas delivery. It is estimated that these wells have a potential of 134,000,000 cubic feet of gas, although they are shut in under contract at present. Seven other wells are being drilled at Buttonwillow and will be connected to the P. G. and E. system when completed if production comes up to that estimated.

Collecting lines have been run to the Dudley Ridge area also, where three wells were completed in 1932. Dudley Ridge is just east of the Kettleman Middle Dome.

May Serve Farm Pumping Load in No. California

Gas Fuel Service Co. of Los Angeles, on January 26, applied to the California Railroad Commission for a certificate to serve farming communities in Kings and Fresno counties with natural gas. From the application it is understood that the company plans to bring natural gas to a considerable area where only electricity is now available for farm pumping and irrigation power purposes. Gas would be obtained from the Kettleman-Lakeview Oil and Gas Co. which is reported to have developed a well of 20,000,000 cu. ft. daily capacity, and the contemplated program may involve laying some 400 miles of pipe line in smaller sizes.

Fitkin to Retain Control of Minneapolis Gas Light Co.

Control of the Minneapolis Gas Light Co. will remain in the hands of A. R. Fitkin of New York, according to reports from the Minneapolis press. The American Commonwealths Power Corp. announced on January 18 that it would not exercise its option to repurchase the control of the American Gas & Power Co., holding company for Minneapolis Gas Light.

New Bulletin on Doherty Washer Cooler Off the Press

The Engineering Experiment Station of the University of Washington, Seattle, Wash., has recently brought from the press its Bulletin No. 67 entitled "The Doherty Washer Cooler," by S. R. Tymstra, instructor in general engineering of the university. The bulletin contains 64 pages, well illustrated with charts and diagrams.

Wilson Named Dist. Manager for The Brown Instrument Co.

O. B. Wilson, formerly manager of the Cleveland, Ohio, office of The Brown Instrument Co. has been appointed district manager of the territory comprising Texas, Louisiana and Southern Arkansas with headquarters at Houston, Texas.

Concerted Drive on "Cooking-With-Gas"

FOLLOWING its organization in December, the National Directing Committee of Executives of the A. G. A. has announced an active program for promotion of gas cookery to the industry. The campaign is styled as the "Tell Them about Cooking-with-Gas" effort, and has for its object a complete information program among employees of gas companies to the end that the industry's personnel may become a more definite factor in educating housewives of the nation on the merits of the modern gas range. The program has been developed under the supervision of the A. G. A. Commercial Section Committee on Domestic Ranges.

Inquiries for full details of the program should be addressed to the secretary of the A. G. A. Commercial Section. In general it is built around a combination of (1) individual activities, which will show individual employees how to develop and capitalize on their personal contacts, and (2) group activities, which contemplate developing a cooperative movement to popularize correct ideas about gas and gas cooking.

The industry in this program is making its first tangible counter move against the present large scale effort to replace the gas range load with electricity, and in selecting its own employees as the primary unit through which to work it follows the precedent of many other industries which have utilized employee sales efforts with high success.

The program contemplates use of three texts under the general title of "Tell Them About Cooking-with-Gas", which have already been prepared. Titles of the texts are, I. "Cooking-with-Gas is *Efficient*"; II. "Cooking-with-Gas is *Modern*"; III. "Cooking-with-Gas is *Economical*." The normal period of the program of employee-training is three months.

Company executives are urged by the National Directing Committee of Executives to place their immediate and full support behind this united program of action for holding and increasing the gas cooking load. Membership of the National Directing Committee of Executives is made up of the following:

Conrad N. Lauer, Chairman, Philadelphia Gas Works Company, Philadelphia, Pa.
H. C. Morris, Vice-Chairman, Ranges, Dallas Gas Company, Dallas, Texas.
C. E. Paige, Vice-Chairman, Water Heaters, Brooklyn Union Gas Company, Brooklyn, N. Y.
Walter C. Beckjord, Boston Consolidated Gas Company, Boston, Mass.
H. C. Blackwell, Union Gas & Electric Company, Cincinnati, Ohio.
J. V. Strange, United Gas Public Service Company, Houston, Texas.
B. J. Mullaney, The Peoples Gas Light & Coke Company, Chicago, Ill.
W. Frank Roberts, Standard Gas Equipment Corporation, Baltimore, Md.
F. W. Shuell, EverHot Heater Company, Detroit, Mich.
Clare N. Stannard, Public Service Company of Colo., Denver, Colo.
F. S. Wade, Southern Counties Gas Company, Los Angeles, Calif.
W. W. Winter, Atlanta Gas Light Company, Atlanta, Ga.
P. S. Young, Public Service Electric & Gas Company, Newark, N. J.

General Gas Light Compiles Evidence on Infra-Red Ray

General Gas Light Co. has assembled a considerable amount of information bearing upon the therapeutic value of radiant type heaters, in an attractive loose-leaf booklet entitled "Evidence." Particular instances in which the infra-red ray produced by radiant type heaters is beneficial are cited, demonstrating that radiant heat strengthens the resistance of the human body to disease. Physical and medical testimony as to the effects of the infra-red ray and its presence in radiant heat from gas fires is introduced. The General Gas Light Co. has used the health appeal effectively in its merchandising of The Humphrey Radiantfire, and has compiled the booklet referred to above to further substantiate the use of this appeal by the gas industry.

Death Comes For Geo. McLean, President of Key City Gas Co.

George McLean, president of the Key City Gas Co., Dubuque, Iowa, passed away suddenly January 19, following an operation for appendicitis. Mr. McLean was 69 years of age, and had been in the employ of the Key City Gas Co. since 1881, when he became meter reader and collector for the company. He had been president of the organization since 1903. In addition to his post with the gas company, Mr. McLean was identified with many civic bodies, being a director of the Dubuque Chamber of Commerce, and chairman of the executive committee of the Upper Mississippi Waterways Association. He was also a member of the American Gas Association and the Mid-West Gas Association, serving at one time as president of the latter organization.

Santa Maria Gas Co. Installs Hart Brooders at Atascadero

Santa Maria Gas Co., Santa Maria, Calif., recently installed 70 Hart 6-foot gas brooders at the Puritan Farms at Atascadero, Calif., replacing 70 electric brooders. The same company previously had installed 45 Hart 48-inch brooders to take the place of electric brooders at the Rosemary plant at Santa Maria.

The H. W. Hart Manufacturing Co., Santa Monica, maker of the brooder, also reports an installation of 36 brooders at the Runnymead Farm, making a total of 216 of the company's brooders used at that plant.

New Safety Gas Burner Patented by Enis Schaded, Wellington, Texas

Enis Schaded, Wellington, Texas, recently patented a new safety gas burner wherein the cock is locked in position when turned off and may not be turned on again except by the release of the locking mechanism. Patent has been granted by the United States Patent Office, Washington, D. C.

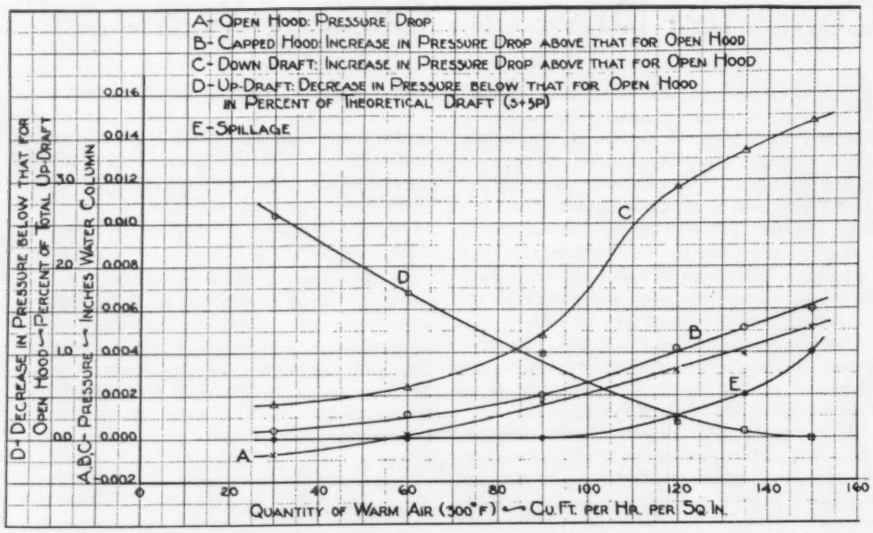

A- Open Hood: Pressure Drop
B- Capped Hood: Increase in Pressure Drop above that for Open Hood
C- Down Draft: Increase in Pressure Drop above that for Open Hood
D- Up-Draft: Decrease in Pressure below that for Open Hood in Percent of Theoretical Draft (s+5p)
E- Spillage
D- Decrease in Pressure below that for Open Hood — Percent of Total Up-Draft
A,B,C- Pressure — Inches Water Column
Quantity of Warm Air (300°F) — Cu. Ft. per Hr. per Sq. In.

Fig. 7. Performance of 6-inch vertical cone type draft hood. (A. G. A. Laboratory design.)

Draft Hoods

(Continued from Page 18)

C. Resistance to Down-Drafts

The increase in pressure drop through a draft hood, when air at 300 degrees F. is flowing through it at a rate of 90 cubic feet per hour per square inch of inlet area and a down-draft of 0.005 inch water column velocity pressure is applied at the hood outlet, shall not exceed 0.005 inch water column.

D. Regulation of Up-drafts

The decrease in pressure drop through a draft hood shall not exceed 4 per cent of the numerical sum of the static suction and five times the velocity head, expressed as inches water column, when air at 300 degrees F. is flowing through it at a rate of 90 cubic feet per hour per square inch of flue area and a chimney effect, consisting of static up-draft and velocity up-draft numerically totaling from 0.06 to 0.07 inch water column, is applied at the outlet of the hood.

E. Spillage

No air shall issue from the relief openings of a draft hood when flowing through the hood at a rate of 90 cubic feet per hour per square inch of flue area and at a temperature of 300 degrees F., with four feet of sheet metal pipe of the same diameter as the outlet of the hood attached to, and above the outlet.

To assist those interested in this general subject, a number of detailed drawings, curves, tables, etc., have been supplied. Dimensional specifications for horizontal and vertical types are given in Figs. 5 and 6 respectively. The performance of a 6-inch draft hood at various test rates up to 150 cubic feet per hour per square inch of flue area, utilizing air heated to 300 degrees F. is shown in Fig. 7. Curve A shows an increase in the "open hood" pressure drop as the air rate is increased, as would be expected. Curve B shows the increase in pressure drop above that for the open hood value when the hood is capped to simulate a blocked flue condition. These amounts increase with increasing rate, somewhat in the same manner as Curve A. Curve C, for the increase in pressure due to imposition of a down-draft velocity of 0.005 inch H_2O, indicates that a down-draft is particularly noticeable with a high rate of air to the hood. Curve D shows a behavior opposite to that of the others; the effect of up-draft becomes less as the rating at which it is operated increases. The ordinates for this curve are the decreases in pressure at the base of the hood due to the application of an up-draft and are expressed as a percentage of the total theoretical draft applied, the latter being considered equal to $s + 5p$ where s is the measured static suction and p the measured velocity pressure. Curve E indicates the spillage characteristics of the hood. No spillage was observed at air rates up to and including 90 cubic feet per square inch; at 120 cubic feet per square inch a very slight amount of spillage was noted as evidenced by the index number 1. Higher rates produced correspondingly greater spillage.

The "capped hood" and "down-draft" pressure drops of this hood are the only ones of any appreciable magnitude. This was due largely to the disc placed below the hood to simulate underlying surfaces, as in a boiler in which the flue collar projects through the top. Without this disc the hood has been noted, in previous tests, to perform much better. Although this hood, which as actually constructed had the dimension "C" slightly smaller than that given in Fig. 3, meets the A.G.A. Listing Requirements, it would probably be improved on blocked flue and down-draft operation without encountering spillage if slightly more relief opening were provided.

Most gas appliances, particularly those consuming relatively large quantities of gas, should be provided with an effective draft hood, if for no other reason than that of efficiency alone, to say nothing of the safety aspects which are involved.

When one stops to consider the appliances which have been installed for years without effective draft hoods, he cannot help but marvel that the number of burner and pilot flame extinctions, explosions, and complaints on inefficient performance, and leakage of flue products has been as small as it is. It is now an established fact that effective draft hoods are an essential part of most types of appliances. All things taken into consideration, it is believed that a satisfactory device of this nature properly installed is one of the most effective means of insuring good service that our industry has available.

The Economics of Removing Locked Meters

(Continued from Page 13)

The similarity of the two curves may be seen readily in Fig. 3 where they have both been plotted to the same abscissae scale.

In Fig. 4 the portion of the curve from Fig. period was plotted against the resetting curve to the same scales. Here again a similar trend may be noted.

With one possible exception the foregoing data indicate that if the removal of a locked meter cannot be justified on the day it becomes closed, neither can its removal be justified at any subsequent time. The possible exception is in those cases where the meter has been closed for a very long period of time, and doubtless indicates that the business has been lost permanently or service will never again be required.

The logical course to pursue, therefore, would be to remove as many locked meters as may be required to prevent the buying of new ones at the time the "close" order is executed. In this way it is not necessary to make a special trip at some later date for the express purpose of removing the meter. The savings thus made in labor and transportation costs may still not make the removal of locked meters an economical procedure, but it will assist greatly in keeping the operating expenses within bounds and will thus establish a more equitable balance between fixed capital charges and operating expenditures.

New Structure at Lompoc for Santa Maria Gas Co.

Santa Maria Gas Co., headquartered at Santa Maria, Calif., now has under construction a new office building at Lompoc, according to R. E. Easton, president. The building is of California "hacienda" design with a patio in front enclosed with round, uncut timbers. Service shops will be located in the rear of the building, with an entrance from an alley. It is anticipated that the building will be ready for occupancy by March 1.

John A. Robertshaw on West Coast Visit

John A. Robertshaw, vice-president of the Robertshaw Thermostat Co. of Youngwood, Penn., was on the Pacific Coast in January, spending several days in San Francisco and Los Angeles in the interest of his company.

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J. CHARLES JORDAN (CHAIRMAN) P. G. & E.
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- Western Appliance Retailing ..... ½ pg.

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- California Arts & Architecture ..... 1 pg.
- Pacific Builder & Engineer ..... ⅔ pg.
- Southwest Builder & Contractor ..... ⅔ pg.

Hotels, Restaurants
- Hotel News of the West ..... ⅔ pg.
- Pacific Coast Record ..... ⅔ pg.
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- Pacific Northwest Caterer & Steward ..... 1 pg.
- Western Hotel Reporter ..... ⅔ pg.
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Miscellaneous
- Western Baker ..... 1 pg.
- Western Confectioner ..... 1 pg.
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"TRADE UP... FOR ADDED in your appliance
This Plant is All-Gas —Here's Why —I.E.
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Above — Pacific Coast plumbers who successfully merchandise modern appliances are featured in the copy for Western Plumbing and Heating Journal.

Right—Western Appliance Retailing carries this convincing testimonial by Nathan-Dohrmann Co.: "Trade Up for Added Volume in Your Appliance Department."

Left — Here the Industrial Engineer calls attention to a modern BAKING installation, in the Los Angeles plant of H. Jevne Co., who, after 50 years' operation, have standardized on gas.

Above — First advertisement in architects' and builders' publications. The "phantom" figure (I. E.), representing the Industrial Engineer, lends action and interest to the new series.

PUBLICITY RESULTS

Gas utilization articles and news items appearing in recent issues of Pacific Coast trade papers

Gas Torch Cutting; Newly Developed Uses—Western Machinery and Steel, December, 1932.

A New Home to Start a New Year—Gas-fired ovens in new Boudin Bakery, San Francisco. Western Baker, December, 1932.

Heat Treating Methods for Automobile Axles—Gas-fired heat treating furnaces in plant of Edwin G. Stanton Los Angeles. Pacific Factory, December, 1932.

San Jose Laundry Effects Fuel Economy—Gas-fired boilers in Troy Laundry, San Jose. Pacific Laundry Journal, December, 1932.

Cooperative Circulating Heater Campaign of G. A. S., San Francisco—Western Plumbing & Heating Journal, December, 1932.

Pompeii Grill Modernizes Kitchen With Gas—San Francisco. Western Restaurant, December, 1932.

Problems to be Considered in Changing Type of Fuel—Use of gas for all types of baking equipment. Western Baker, December, 1932.

Floating Heat for Hot Galvanizing—Diffusion flame; A. G. A. Research. Western Machinery & Steel World, December, 1932.

Gas Keeps Them Warm at Arrowhead — Gas for lighting, heating and cooking at Lake Arrowhead Resort. Keeler's Pacific Hotel Review, December 31, 1932.

New Fruit Confections Called "Health Foods"—Gas for candy cooking at Infanta Pomona Co., Los Angeles. Western Confectioner, January, 1933.

BUTANE - PROPANE NEWS
Covering Liquefied Petroleum Gas Service

Bottled Gas and City Gas Are Sales Allies

By T. RUSSELL ROBINSON
President
Robinson Management Association, Inc.
*Boston, Mass.**

THE goal which all of those represented at this joint meeting are working hard to reach, is increasing the outlets for liquefied and compressed gases in the forms in which each particular organization specializes. You probably consider that this is an end in which the "City Gas Company" can have little or no interest. On the contrary, it is a subject in which some of us "City Gas" men have a great deal in common with you, especially those of us who are now using some form of liquefied gas to supply service to our city gas consumers.

The organization which I represent, supervises the operation of three public utility corporations in New England, supplying gas service, using butane as the source of gas supply. The company at Calais, Maine, was one of the first city gas companies in the United States to change to butane gas. Prior to making the change, the company had distributed coal gas to its consumers. In 1929, it was faced with the prospect of an increase in the capacity of its gas works. The only thing to do seemed to be to install a water gas set. This in the smallest economical size would have had so great a capacity that it would be beyond the ability of the community to purchase the resulting output even at selling rates which would have allowed gas to be used in every possible way. The butane process was then about to come into practical use. It was investigated and installed at a capital cost of less than 20 per cent that of the water gas unit.

The process of adapting the appliances to the butane gas in those days was more difficult than it has since become, as the appliance manufacturers were not prepared to supply the necessary burners, spuds and orifices; but diligent and intelligent work by the operating organization has obtained such splendid results that city gas appliances manufactured as much as 20 years ago are today operating efficiently and giving excellent service when burning air-carbureted butane gas.

The process of adapting the appliances to plants are supplying butane gas to important centers on Cape Cod in Massachusetts. These properties are all equipped for high pressure distribution. They are capable of handling all the potential gas consumers in the areas now served as well as those in many contiguous areas which will become available from time to time in the future, as mains are extended.

Before deciding to adopt the butane process for the gas supply on Cape Cod, the production problem was explored in every direction. Estimates were made as to the results to be expected from constructing a modern water gas plant centrally located for which long transmission mains would be needed, also from purchasing gas from several sources, with equally long transmission mains, and of course the butane process was analyzed.

The capital investment involved in building a central water gas plant or in purchasing gas with long transmission mains even with low costs for gas made or purchased, placed the delivered cost of such gas with capital charges added so far above the delivered cost of butane gas including the capital charges of several isolated butane plants, as to leave no question as to the advantage of this type of system.

The present plants are so located and the transmission system so designed that as the properties expand, the several parts will ultimately attain physical interconnection which will allow gas to flow interchangeably between the territories. Even with this accomplished, the investment in mains will still be less than required from the central water gas plant. At that future date, the butane production costs per M c.f. will be much below the best price which was quoted for gas purchased from outside plants.

The work of installing mains differs in no wise from the usual practice of laying ordinary high pressure gas pipes in the highway.

The high pressure mains which are all of steel pipe welded are handled first, by having the 40 foot lengths joined and welded on the surface of the ground and then tested with 85 pounds of air for leaks. They are then dropped into the trench, being purposely handled roughly to start any leaks, and when in place are again tested for leaks with 85 pounds air before covering.

The high pressure system offers the advantage of giving each separate consumer a constant gas pressure within his premises as each service installation is provided with a separate regulator. With this plan, the appliances can be adjusted to operate at all times within a narrow limit of pressure change.

By adopting a system of low initial capital cost, it has been possible to set up rate schedules more favorable to the consumer than would have otherwise been possible, so that from the start, both company and consumer benefited. As the initial rate schedules produced almost at once a profit from operation applicable to fixed charges and as the load is increasing rapidly, it is apparent that only a brief period will elapse before the sales volume becomes ample to yield a fair return on the investment.

To illustrate the advantages somewhat in detail, the rate schedules of the companies on Cape Cod offer gas for water heating at $1.10 per M c.f. and for house heating at 75c per M c.f. I feel confident that it is correct to say that had we constructed a central water gas plant or arranged to purchase gas that neither of the above rates could have been offered with any assurance of profit so soon after the beginning of operations.

In the development of the gas industry, the bottled-gas distributors and the city gas companies have a great deal in common, so that whenever possible, they should with mutual advantage, study to develop plans to work in complete co-operation.

The city gas company long ago developed the desire for gas service in the minds of a great part of city people. As the time has gone on, many city people have wished for gas service in country districts, where city gas mains cannot be installed to operate profitably. Conversely, the pioneering effort of the bottled gas distributor is tending to cause a more general use in city and suburban areas. Meanwhile city gas mains are pushing their way into the country.

An unthinking bottled-gas distributor will at first consider that an expansion of the city gas mains is an inroad into the field which, because of his efforts, is his private possession.

A little thought will, I believe, demonstrate that such an attitude is to say the least, most unprogressive as it will in the long run react to his undoing.

Prior to establishing city gas service on Cape Cod, residents had the benefit of bottled gas service. The general impression seemed to be that this service was only for the wealthy and nowhere near saturation was built up by the distributors. I believe that for every bottled-gas installation later changed to city gas the distributor has found it more easy to substitute a new suburban consumer and perhaps additional ones. The answer to this can only be obtained from a detailed examination of the records of each distributor and of the companies.

*Presented before the joint convention of the Compressed Gas Manufacturers Association and the National Bottled Gas Association, Waldorf Astoria Hotel, New York City, January 23, 1933.

The gas industry faces most severe competition, since electric companies and oil companies with range oil burners and oil-burning appliances for house heating are forever ringing the door bells of all who use anything but their product.

For the bottled-gas man to class the city gas company as a competitor only lines up one more force for him to overcome, while his real need is a helpful ally to bring up re-inforcements.

To illustrate the activity of this competition, I am told that the Boston Consolidated Gas Co. now has some four or five salesmen of gas house heating and on the other side it is estimated that the oil burner people have altogether some 200 salesmen. On this basis, man power alone is overwhelmingly against the city gas company in Boston.

As the shore line changes with the ebb and flow of the tide, so will the division line between the territories of the City Gas Company and the bottled-gas distributor change, but if the two interests work with intelligent cooperation, the results should be mutually profitable.

Such bottled-gas installations as exist when new city gas mains are laid are easily readapted to the use of butane gas. This promotes good will on the part of such consumers toward the gas industry, since change-over costs are low. Such persons therefore easily become advance agents for the bottled-gas industry as they are sure to tell all their rural friends that to spend money for bottled-gas units is no waste, because when city gas comes the same appliances are used, while if they install oil or electric devices these are useless when city gas arrives.

In the case of some of our own companies, the salesman has been able to turn over to the bottled-gas distributor several installations not in reach of the gas mains and so together the gas-mindedness of the prospect was held against the competition of the electric or oil salesman. The market for bottled-gas will widen, as the waves from a stone thrown into a pond widen, through such a program sponsored jointly with the city gas company.

There is another reason why the bottled-gas man should ally himself with the city gas company. When one markets a product which touches human need as intimately as heat does, it is only natural for the consumer to look at the use of it from the point of view of permanency. A distributor of merchandise stays in business only so long as it is profitable. If I am not mistaken, most bottled gas distributors would hesitate to guarantee each purchaser that they would be in business not less than, say 10 years after they sell him the installation.

Now comes the city gas company as an ally with reinforcements. Public service companies are essentially permanent organizations, and I have found them harder to kill than to create. The chances are that the utility will be doing business when all of today's personnel are laid away, while its traditions will impose an obligation upon its future organization.

With the city company behind you, you will not stretch the truth to say to your consumer:

"As soon as you and all your neighbors are my customers, you can, should I cease

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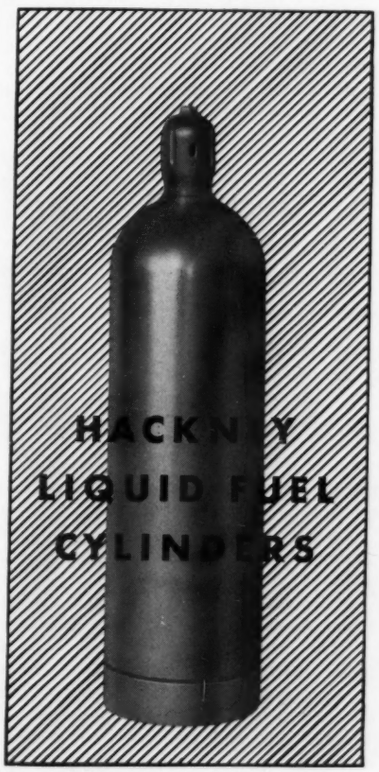

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to do business, easily induce the city company to take over the service as there will be enough of you using gas to make it worth while to install the mains. I propose to do a good job while I am here. Between the two of us, you are assured of permanent service for your gas use."

The approach of the oil appliance salesman is much worse from this angle than is yours. He sells the appliance, leaves it to the oil man to supply the heating agent, the plumber or someone else to do the servicing and when he gets his pay, vanishes into the thin air looking to some new purchaser to provide his daily bread through new commissions or sales.

Every potential gas consumer who succumbs to the oil or electric salesman, sets back the day when gas will attain its rightful place in the home.

Every gas consumer gained, either for bottled or city gas, is a step forward toward increased outlets and our ultimate success.

Self interest on the part of either the bottled-gas distributor or the city gas company in respect of the other will only serve to push this objective further into the future.

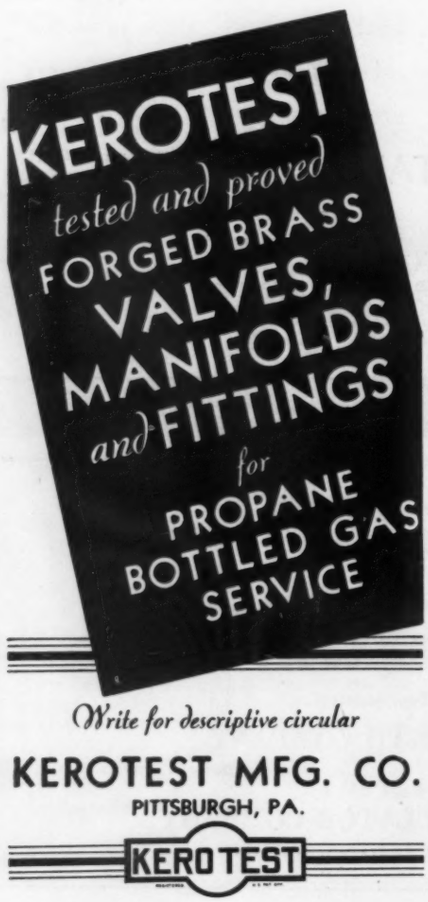
In the gas and like industries, the first sale is only the fore-runner of many future sales to the same consumer. The city gas company like yourselves is in business for profit. Each month its bills for gas service appear in the consumers' mail. We try our level best to have such an unwelcome thing as a bill receive a welcome and as a prelude to this, endeavor to have the consumer realize he is getting his money's worth and thus develop a cordial feeling about the money he owes us.

I hope that a similar policy is the high purpose of your industries. I can well imagine that it is easy for disputes about service or charges to arise, since you are under no statutory requirement to treat all purchasers alike. Unscrupulous customers will question the ethics of your business. They do in ours and they do damage even though the claims are unfounded.

How easy it is for someone to say that you don't allow him credit for gas in cylinders which are removed. A story of this sort if allowed to spread goes far toward destroying the confidence of the community toward the industry.

How would it be in a co-operative campaign for us to try to help one another in getting down to the real causes of the complaints we hear about the dealings of the other. See to it that we tell the actual facts about one another and where possible, work to correct erroneous gossip and incorrect impressions.

There are many other features to which a co-operative program of this sort would extend, and different localities will develop special opportunities for its application.



Write for descriptive circular
KEROTEST MFG. CO.
PITTSBURGH, PA.
KEROTEST

Bottled Gas and Compressed Gas Men Hold Conventions in January

THE National Bottled Gas Association, expected soon to become affiliated with the Compressed Gas Manufacturers Association, met simultaneously with that organization, January 23-24, at the Waldorf-Astoria Hotel, New York. The conventions were held separately, with certain meetings in which there was mutual interest being held jointly. The luncheons were held jointly, being sponsored on the first day by the Compressed Gas Manufacturers Association and on the second day by the National Bottled Gas Association.

The first afternoon session was also a joint meeting, the Bottled Gas group providing speakers for the occasion. Addresses dealt with the dependence of industries upon bottled gas, and subjects were chosen to fit into the general theme of the C.G.M.A. program which was the inter-relation of the compressed gas industries and the extent to which other industries depend upon compressed and liquefied gases.

Subjects of the papers prepared were: "The Dependence of Industry on Bottled Gas", by D. B. Williams, Carbide and Carbon Chemicals Corp. (read by M. G. Farrar); "The Dependence of Butane for Industrial Heating", by Richard D. Hudson, New Jersey Industrial Gas Co.; "Our Mutual Opportunities", by T. Russell Robinson, Robinson Management Association of Boston, published in the current issue of *Western Gas*.

The Compressed Gas Manufacturers Association also invited the Bottled Gas men to attend its 20th annual dinner held on the evening of the last day.

Other meetings of the Bottled Gas organization were the directors meeting on the morning of the 23rd and the general business session throughout the second day. These were presided over by Mark Anton, president.

Some of the more important subjects discussed at the meetings were those of standardization of equipment; closer cooperation between members of the association in the exchange of credit information; and cooperative advertising. E. L. Mills of the Bastian-Blessing Co., Chicago, read a paper on Standardization of Equipment, at the request of the president of the Association.

H. E. Dexter of the Central Hudson Gas & Electric Co. of Poughkeepsie spoke on the utilities' attitude toward bottled gas service.

Committees announced by the chairman to be appointed were committees on Standardization of Equipment and on Group Advertising. This latter committee will suggest ways for the cooperative planning and buying of advertising.

The proposed affiliation of the Association with the C.G.M.A. has been favorably voted upon and is now before the executive boards of the two associations for an arrangement of details. Under the proposed plan the two associations will retain their individual corporate identities. F. R. Featherston, secretary and treasurer of the C.G.M.A., would also serve as secretary and treasurer of the N.B.G.A.

First Installation of Liquid Gas for Orchard Heating

Liquid Gas Orchard Heater Corp., located at 323 Transamerica Building, Los Angeles, has patented a liquid petroleum gas orchard heating system and announces satisfactory operation of the first five-acre installation, made near Pomona, Calif. James M. Conlon is president of the company, Paul R. Melchert is in charge of sales, and Harold W. Smith in charge of engineering. A detailed description of this orchard heating system will appear in this department of *Western Gas* shortly.

Butane Plant at Mayfield to Be in Service Late in February

The Mayfield Gas Co., 1307 Washington St., St. Louis, Mo., is constructing a plant for the service of butane gas at Mayfield, Ky., according to word received from Louis Greenspon, president of the company. The plant is designed to serve 600 customers. The office and display room have been constructed, the plant building is up, with tanks already on the foundation. With the holders and compressors installed the plant will be ready for operation. It is estimated that service will begin in 30 days.

Personnel Changes Announced for Santa Cruz Companies

WITH the removal of headquarters of Natural Gas Corp. of California and West Side Natural Gas Co. to the Alta Building in Santa Cruz, also headquarters for Coast Counties Gas and Electric Co., several changes in personnel have been announced. J. B. Wilson, president of Coast Counties, will also be president of Natural Gas Corp. of California and West Side Natural, and E. M. Lindsey will remain as general manager for Natural Gas Corp. of California as previously announced. G. O. Wilson has been appointed general superintendent and assistant to President Wilson, and John Wolfe has been named G. O. Wilson's assistant. A. E. Hall, formerly in the engineering department of the Standard Management and Operating Corp., San Francisco, has been transferred to Santa Cruz, and will have charge of operations of Natural Gas Corp. of California and West Side Natural Gas Co.

Charles Grunsky has been appointed to supervise engineering in both gas and electrical departments, and will also handle rate matters. A. R. Bailey continues as superintendent in charge of the gas department. Horace Holley is plant superintendent for Natural Gas Corp. of California. Pierre Vinet is new business manager in charge of all new business and sales for the three companies, and Miss Ella Russell is in charge of advertising and publicity. Phil J. Schaefer is in charge of the purchasing and stores department. D. A. McCullough is general accountant for the Natural Gas Corp. of Calif. and West Side Natural Gas Co. and W. L. Oellerich has been appointed traveling auditor and special accountant for those two companies.

As reported last month, J. I. McKean remains as district manager for West Side Natural at Taft, reporting directly to President Wilson.

J. H. Warner is plant manager for Natural Gas Corp. of California at Yreka; J. R. McDonald is manager at Dunsmuir and F. R. Fairweather at Arcata. John Verhall, who has been manager for the towns of Fairfield and Suisun has been transferred to Rio Vista and Isleton. H. P. Clark who has been manager at Vacaville will remain in his present location and in addition will supervise operations at Suisun and Fairfield. C. C. Josselyn, who has been in charge at Rio Vista, has left the company. R. L. Hayden continues in charge of the Imperial Valley territory which includes the towns of El Centro, Calexico and Brawley.

Franchise Detroit Lakes Co. In Village of Glyndon

According to word from Sol Fligelman, president of the Detroit Lakes Gas Co., Detroit Lakes, Minn., this company has obtained a franchise from the Village of Glyndon, to render gas service in that community. In line with its practice in smaller towns, the company will install its system of underground tanks for liquefied petroleum gas storage, with permanent service connections and meters.

SCAIFE

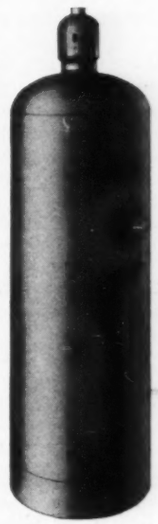
I. C. C. CYLINDERS

A majority of distributors of Liquefied Petroleum Gas now use the Scaife cylinder.

SAFE

ECONOMICAL

GOOD LOOKING



FOUNDED 1802

WM. B. SCAIFE & SONS Co.

Oakmont, Pa. (Pittsburgh District)

New York Pittsburgh Chicago

Winslow Gas Co. Conducts Letter-Writing Contest

Winslow Gas Co., Winslow, Ariz., recently completed a contest during which its consumers submitted letters on "Why I Should Use Gas for Heating". The contest was supported by newspaper advertising, handbills, etc., and prizes were offered in equipment and appliances. The company serves butane in Winslow.

Distributing in Southern Florida

Florida Bottled Gas Service Inc. has under way a program for serving bottled butane in Miami, Fla., and surrounding territory. A bulk station has been constructed, and since the opening of the store in November, 200 installations had been made by January 14. The gas is sold on a sliding scale from 12 cents per pound for small quantity consumption, down to 8 cents per pound for large commercial uses. Herman Mankes is president of the company.

Asks Fairbury Permit. May Construct Butane Plant

A. J. Smith, president of the Consolidated Utilities Corp., Flora, Ill., has applied for a permit to serve butane gas in Fairbury, Ill. A central plant will be constructed similar to the one at Watseka, should the franchise be granted.

Meeting Special Sales Resistance

(Continued from Page 15)

Arrangements for dealer participation in the sales-rental plan have been worked out carefully. Details may be summarized as follows:

Established dealers are regularly contacted and encouraged to take part, selling approved equipment, correctly installed. They sell at their own prices, including the same items as the gas company includes in its installations. When they finance their own sales they use whatever terms they may elect; when they request the company to finance their sales they use the company terms and sales orders, and secure company credit approval.

Dealers are offered financing service by the company on sales which measure up to its requirements; dealer accounts are bought for cash upon approval of the installation, and the accounts are then turned over to the pipe line company which reimburses the distributing organization for its investment.

A $20 load-building bonus is paid the dealer for each conversion burner installation, and $25 for each gas furnace or boiler installed under the participating plan. In the following form of agreement between company and dealer further particulars are given:

MEMORANDUM OF AGREEMENT

Agreement covering the sale of Gas Conversion Burners or Gas Designed Furnaces and Boilers for Central House Heating by and between the . . . (gas company) . . . and . . . (Dealer).

Witnesseth: The dealer agrees with the company:

1. To sell approved makes of gas-fired conversion burners, furnaces or boilers and to give continuous sales effort to their sale.
2. To use the company's sales order provided for this purpose and to follow the rules and regulations of the company covering this activity.
3. That all orders will be subject to the approval of the Credit Department of the company. Any orders not so accepted to be turned back to the dealer.
4. To make the installation in a high grade workman-like manner and to have each one complete, including an automatic humidifier, all necessary piping, wiring, brick work, cleaning of the heating system and such alterations or changes in the hot or cold air piping or in the furnace casing, register faces, boots, etc. as may be considered necessary by the heating inspector of the company.
5. To render service on all installations to the satisfaction of the customer.
6. To turn over to the company the sales orders properly filled in and correctly signed together with the company's work order bearing the signature of the customer, that this installation has been completed to his satisfaction.
7. Repossessions of equipment sold by dealers, made necessary by failure of customer to meet contract, automatically revert to dealers. These repossessions to be handled as follows: Dealer to remove gas-burning equipment, and replace property which was removed at time of installation of gas equipment. The above-mentioned equipment when removed to become property of dealer. Unpaid balance of customer's account to be charged to dealer, deductable from credit accruements due dealer on future sales. Amount of load-building bonus paid at time of installation also to be returned to company. This amount to be deducted from subsequent load-building bonuses on future sales.
8. That this will definitely terminate upon written notice at any time.

The company agrees with the dealer:

1. To carry the dealer's accounts where the dealer turns over to the company sales orders that have credit approval, that are properly filled out and signed. Upon receipt of these the company will inspect the installation and if found to be satisfactory will issue check in payment.
2. To pay the dealer $20 as a load-building bonus on each complete conversion burner, and $25 on each gas furnace or gas boiler installation made by him which has met the approval of the heating inspector of the company.
3. To give to the dealer a reasonable amount of engineering assistance, if desired.
4. To support this program through advertising and this advertising to make reference to other dealers.

Selling at the Burner Tip

In Kansas the 1931 anti-utility merchandising legislation has set up obstacles to traditional selling methods for the time being. Some companies, it is true, have challenged the anti-merchandising law in the courts and meanwhile are carrying on their usual load-building activities. Others have chosen to cut their sales program to a new pattern. In this latter class falls the Kansas Power and Light Co.'s "burner tip rate", which was described in *Western Gas* for July, 1932. J. A. Bell, commercial manager for this company, has supplied additional information on the working of this plan for the purpose of this symposium.

Since it was deemed impossible to merchandise or rent house heating equipment under the Kansas prohibitory statute this utility secured approval of the Public Service Commission of Kansas to apply a burner tip rate, under which automatically controlled conversion burners are installed on customers' premises. The burners remain the property of the company and the company assumes the responsibility for keeping them in good operating condition at all times.

The burner tip rate is in no way a rental plan, but is purely a rate set-up under which gas is sold at the burner tip rather than at the meter. It is an optional rate and upon its selection by the customer a $15 special deposit is required as an evidence of good faith. This deposit is refunded to the customer after $50 worth of gas has been used through his meter.

Under this rate the first 3,000 cubic feet of gas used each month takes the standard rate, on the assumption that the user will burn this amount in cooking and water heating. Above 3,000 cubic feet the burner tip rate is 10 cents per thousand higher than the standard rate, up to 100,000 cubic feet. The company has designed this rate to retire its investment in the heating equipment over a 10-year period and to take care of interest and maintenance charges. It has been estimated that the rate will produce a revenue of $13.60 a year per burner to cover use of the equipment. For the eight heating months of the year the burner tip rate applies; during the non-heating months standard rates automatically apply.

Customers have reacted very favorably to the burner tip rate, some 900 conversion burners being installed on this basis in the fall months of 1932. The rate was created particularly to add heating load in rental properties.

There are undoubtedly many other special plans which have come into recent use to meet unusual sales resistance, but those described above are offered as typical. They should hold interest to managements and sales executives who in this year of 1933 more than ever are concerned with the continual need for holding up the load curve.

Uphold Johnston Patents on Electrical Resistance Welding

Republic Steel Corp. of Youngstown, Ohio, announced last month that the Johnston patents covering electric resistance welding of tubing and pipe have been upheld after litigation extending over eight years. During this litigation the Johnston patents, owned by Steel and Tubes, Inc., of Cleveland, have been uniformly upheld, and in a recent decision the U. S. Supreme Court has refused to review the favorable outcome in the Court of Appeals. Steel and Tubes, Inc., is a subsidiary of Republic Steel Corp. of Youngstown, Ohio, where the Johnston process, originally developed to produce small, light wall mechanical tubing, has been applied to commercial production of pipe in sizes up to 16 inches in diameter and in all standard wall thicknesses.

New Catalog Describing Brooders By H. W. Hart Manufacturing Co.

H. W. Hart Manufacturing Co., Santa Monica, Calif., has recently brought from the press a new catalog on Hart Gas Brooders. The booklet contains 20 pages of information concerning the appliances, giving photographs and description, with specifications for the various types. Copies may be obtained by writing to the company.

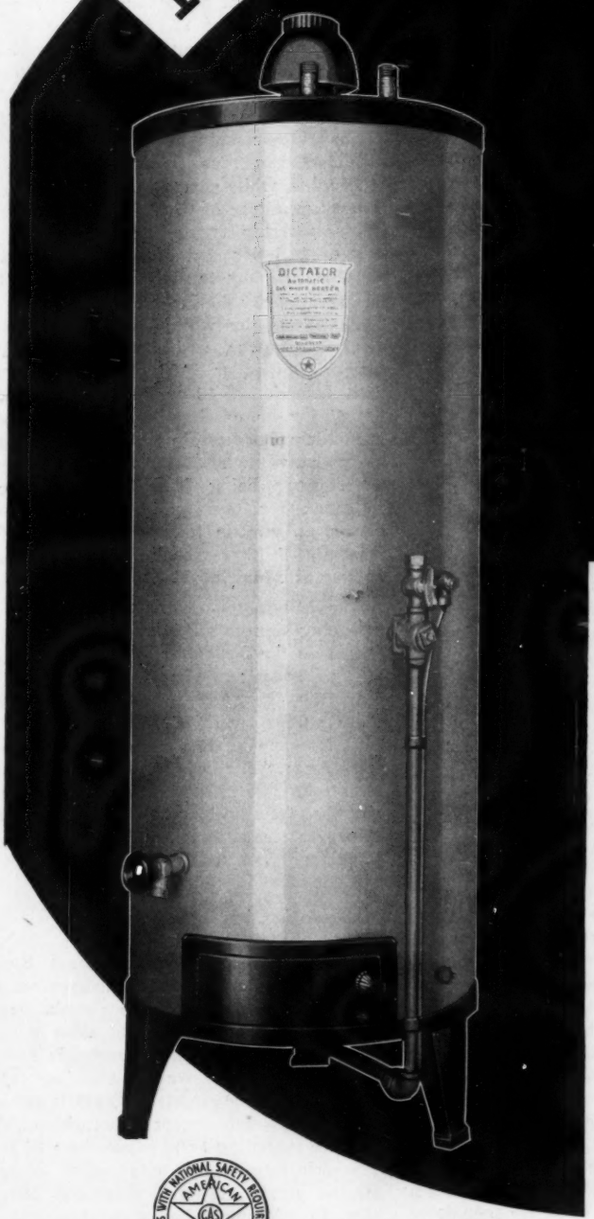
To Spend $82,524 on Gas Main Extensions in Mason City

Peoples Gas and Electric Co., Mason City, Iowa, plans to spend $82,524 in extensions and additions to its gas transmission and distribution systems shortly. The work will include an extension to the plant of the American Beet Sugar Co. near Mason City.

Named Permanent Receiver for Consolidated Gas Service

Logan W. Cary, president of the Consolidated Gas Service Co., Oklahoma City, Okla., who was appointed temporary receiver of that company by Judge Edward S. Vaught of the federal court some time ago, was confirmed as permanent receiver on January 23

NEW • LOW PRICED



The Dictator

GAS FIRED AUTOMATIC STORAGE WATER HEATER

A newcomer to our family of water heaters! Built with the same careful attention to design and construction as in our higher priced line... Contains features never before combined in similarly priced heaters. Some of these features are:

Heavy blanket of rock wool insulation on sides and top.

Heavy cast iron base and legs.

High lustre baked enamel jacket.

Heavy tank construction, galvanized under latest improved process.

Snap action thermostat.

Bi-metallic thermostatic pilot.

Priced to meet today's demand, The DICTATOR enables you to secure volume business.

COMPLIES WITH NATIONAL SAFETY REQUIREMENTS — AMERICAN GAS ASSOCIATION — APPROVED

AMERICAN GAS PRODUCTS CORPORATION

40 WEST 40th STREET, NEW YORK, N. Y.

Division of AMERICAN RADIATOR COMPANY

Is Municipal Ownership Slipping?

(Continued from Page 9)

An advertisement of the Public Ownership League in a Chicago newspaper in September carried a statement that the Public Ownership League of America had made 68 cities tax free. The writer advised the newspaper concerned that there was ample justification for bringing this advertisement before some body concerning itself with truth in advertising, but that this would be unnecessary if the newspaper should ask the advertiser for authority for the representation referred to. Acknowledgement of this challenge came from the Chicago Better Business Bureau with the statement that on being interviewed Carl Thompson had advised that the advertisement was incorrect and would not be run again, and that the newspaper advised that correction would be made.

Frequent inquiry is made as to how Oklahoma towns without a city tax for general expenses operate. The answer is different as to each of the more than 80 such towns. One of these towns is Duncan, where municipal and company electric plants compete. Duncan has no general city tax. The answer to the question as to how this town operates without a general levy is clear. Revenue from tax penalties last year represented an income equal to 1.1 mills on each dollar of valuation. A special sewer tax represented 1.5 mills. A special sanitary tax represented 1.97 mills. Excess of revenue for water over similar revenue at rates in effect at Lawton, a nearby town with utility company electric service, represented 4.1 mills on the dollar of Duncan's valuation. These four revenue sources yielded 8.67 mills per one dollar of the Duncan valuation, or 2.67 mills in excess of the maximum general city levy permitted by the Oklahoma law.

Most of the Oklahoma towns omitting a general city tax, both with and without municipal utilities, are small and their need for municipal financing not great. In most of these the principal factor in meeting the need without a general levy is economy in operation and development of such special sources of revenue as may be feasible. Fines, franchise taxes, occupation taxes and other special taxes and fees yield sufficient revenue to meet the requirements. In each real economy in operation is an important contributing factor.

Taxes and Rates

Most of the controversy as to the merits or demerits of municipal utility ownership and operation revolves around the question whether or not it is advantageous to citizens generally from the standpoint of taxation and rates.

A competent analysis of finances of most of the Oklahoma towns with municipal utilities shows conclusively that operation of the same has not been advantageous. Ponca City, largest of the group and outstanding for efficiency in all its affairs, is in a county where public service property, including common carrier pipe lines, is 25 per cent of the total county valuation, this making tax levies on other property relatively low. Its special sources of revenue are well developed and its water department revenue high. Three thousand gallons of water a month will cost the resident of Ponca City $4.88. In Ada, a city utility company electric and gas and municipal water service, the rate for 3,000 gallons of water a month is $1.00.

The proposition that municipalities can reduce or eliminate tax levies for city purposes by making utility rates sufficiently high to provide a surplus of revenues over operating expenses, part or all of which can be applied to municipal expenses, is self-evident. The pertinent question, therefore, is whether the towns having municipal utility service and earning a surplus so applied are serving the public at rates as low as the public might reasonably expect for service supplied by utility companies. The few exceptions to the rule are the basis for such news stories proclaiming the advantages of municipal ownership as, if any, can be justified by analysis of the facts. But the rule is that competent analysis disproves such claims. News editors are looking for news, and it is the unusual occurrence that constitutes the commodity in which they deal. Someone has explained that if a dog bites a man, it usually would not be news; but if a man bites a dog, it would be. Thus, if municipal operation is unprofitable, it is not news; but if the contrary be true, or claimed to be true, the story goes from the editor's desk to the composing room.

In Oklahoma the average net bill for 50 kw.-hr. of electricity in all Oklahoma towns with municipal plants was $4.93, figured August 1, 1932, compared with $4.12 in utility company-served towns of nearest population, according to the 1930 census; or 81 cents higher in the municipal plant towns than in those with company service. In towns buying electricity from utility companies for municipal distribution the average bill as of that date was $1.32 higher than in towns with utility company service. Combining the two groups, (towns with municipal plants and those with municipal distribution) the average bill for 50 kw.-hr. as of that date, was $1.04 higher in this group than in the towns of nearest the same population with full company service. The average net rate for 5,000 cubic feet of natural gas (there is no manufactured gas in Oklahoma) in Oklahoma towns with municipal gas service is 53 cents per 1000 cubic feet, figured August 15, 1932, compared with 44.7 cents per 1000 cubic feet in towns of nearest the same population, served by utility companies, or 8.3 cents higher in the municipally served than in the company served towns. The foregoing comparisons are proof against the charge that towns giving a favorable comparison have been selected, as all municipal utility towns are included and each is compared with the company-served town of nearest the same population.

Such comparisons as are available from other states, as far as this writer is informed, lead to similar conclusions as to comparative merits of municipal and company service from the rate or the tax standpoint.

Valuable statistics comparing municipal with utility company electric operation in Minnesota were announced last fall by the Minnesota Taxpayers Association, based on records of the Minnesota Tax Commission. Comparison was made between 20 municipal ownership cities of Minnesota and 20 similar cities with company service. It was shown that the municipal ownership cities averaged a total tax rate of 87.77 mills per dollar, while the utility company cities averaged 84.25 mills. The municipal ownership towns had an average municipal tax rate of 28.08 mills and the company towns 36.72 mills. The municipal ownership towns had an average municipal tax plus special assessments of 31.91 mills, while company towns had a corresponding figure of 29.62 mills. The municipal ownership towns had an average net debt of 10.6 per cent of assessed valuation, and the company towns, 6.1 per cent. The average bill for 40 kw.-hr. of electricity for home consumption was $3.09 in the municipal ownership towns, and $2.86 in the utility company towns, or $2.58 in the latter group with deduction of 10 per cent for taxes paid. For 50 kw.-hr. of electricity the average bill in municipal ownership towns was $3.65 and in company towns $3.21, the figure for the latter group being $2.89 with 10 per cent reduction for taxes paid. The foregoing figures on electric bills are based on data from the 1932 yearbook of the Minnesota League of Municipalities.

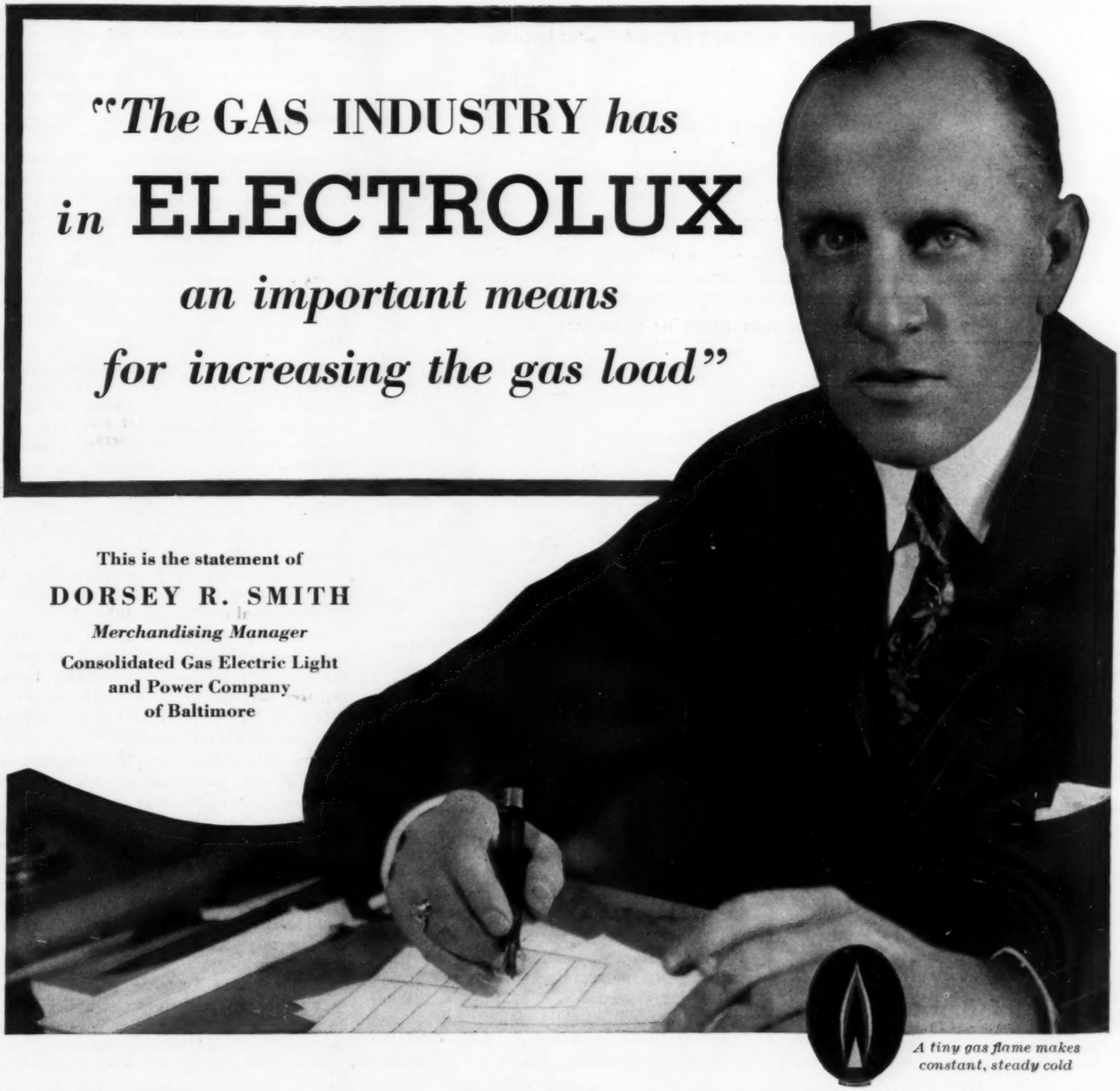
The Minneapolis Tribune, discussing the foregoing figures editorially, says that they "knock in the head" the idea that cities and villages having municipal power plants not only enjoy lower rates but are free from a large part of their tax burden through the earnings of these electric plants. The editorial closes: "The report of the Association should be sufficiently comprehensive to suggest that the advantages of municipal ownership as a means of tax relief are often more imaginary than real."

Situation in Nebraska

The Nebraska Section, National Electric Light Association, stated in November that the Nebraska state auditor's biennial report, soon to be published, would show data on municipal operation in Nebraska as follows: 525 incorporated towns and cities, 413 of these below 1,000 population; 129 towns with no municipal debt except school district, three of these exceeding 1,000 population; 96 of the 129 debt-free towns with utility company electric service, 13 with municipal distribution, 10 with municipal generation and distribution, one with distribution owned by another town and nine with no electric service; 332 incorporated towns with utility electric service, 96 of these or 29 per cent debt free; 71 incorporated towns with municipal generating plants, 11 of these or 15½ per cent debt free; 192 incorporated towns with municipal distribution, 13 of these or 13 per cent debt free; 269 incorporated towns with population under 1,000 with utility electric service, 95 of these or 35.3 per cent debt free.

The Nebraska Section's analysis of domes-

"*The* GAS INDUSTRY *has in* ELECTROLUX *an important means for increasing the gas load*"



This is the statement of

DORSEY R. SMITH

Merchandising Manager

Consolidated Gas Electric Light and Power Company of Baltimore

A tiny gas flame makes constant, steady cold

MR. SMITH is one of many prominent gas company executives who have grasped the real significance of selling Electrolux. The gas refrigerator is not just another gas appliance. It taps a new vein for gas consumption. Every Electrolux sold adds 1500 cu. ft. per month to the gas load. Not a replacement load, but additional consumption which takes the small convenience user out of the non-profit class.

This is important, but Electrolux means even more to the gas industry. Because it is so modern and dramatic it popularizes new uses for gas. It builds new prestige for your company and gives a strong impetus to the sale of other gas appliances.

Now is the time to plan to put a major sales and merchandising effort behind Electrolux in 1933. Let the new Electrolux load aid in taking up current industrial slack on your lines! To assist you in selling Electrolux, we've prepared a series of valuable sales booklets as well as merchandising plans. Write and tell us you are interested. We will gladly send full information. Electrolux Refrigerator Sales, Inc., Evansville, Indiana.

ELECTROLUX

THE *Gas* REFRIGERATOR

TABLE NO. 1. DOMESTIC ELECTRIC RATES IN NEBRASKA

		Average Pop.	Average Net Bill 30 kw.-hr.	50 kw.-hr.	100 kw.-hr.
Group I	71 Municipal towns owning generating and distributing systems	2,963	$2.86	$4.37	$7.48
Group I	Excluding Lincoln	1,893	2.87	4.39	7.52
Group II	102 municipal towns owning distribution system only	673	3.35	5.26	9.59
Group III	379 utility towns	1,552	3.11	4.29	6.69
Group III	Excluding Lincoln and Omaha	772	3.12	4.30	6.70
Groups I and II	173 municipal towns (all)	1,162	3.15	4.89	8.72

TABLE NO. 2. MUNICIPAL DEBTS IN NEBRASKA

		Average per capita debt Incl. School	Excl. School
Group I	Towns with municipally owned generating stations and dist. systems	$104.44	$61.17
Group II	Towns with municipally owned dist. systems Current purchased wholesale	103.60	54.50
Group III	Towns served by private capital	85.04	40.93

tic electric rates and municipal debts is given in Table No. 1 and Table No. 2.

Public Studies the Issue

No source of information on the general trend of municipal ownership in this country can offer all the facts. There are evidences from all directions, however, that the municipal ownership idea is receiving constantly more general and more careful study, and that competent investigation leads to conclusions unfavorable to the plan.

A LENGTH of 48-inch cast iron pipe weighs over 6 tons. To produce 16 lengths it is necessary to mine 275 tons of ore, 275 tons of coal and 75 tons of limestone. This material — 625 tons — yields 100 tons of pig iron which in turn yields 100 tons of pipe. Freight is ultimately paid on 825 tons of material. To produce and lay 100 tons of cast iron pipe requires the labor of 740 men for a day. Laying pipe thus gives employment in basic industries — m i n i n g, foundries, railways, contracting—and is one of the ways back to prosperity.

U. S.

Cast Iron Pipe

United States Pipe and Foundry Co., Burlington, N. J. Sales Offices: New York, Buffalo, Cleveland, Chicago, Philadelphia, Pittsburgh, Dallas, Birmingham, Kansas City, Minneapolis, Seattle, Los Angeles, San Francisco

Torrington, Wyoming, proclaimed as tax-free through municipal ownership, is found on investigation to have the benefit of service from a government electric plant at subnormal cost; but even with this advantage to have abandoned its alleged tax-free status. Its citizens voted in 1932 to meet their municipal expenses in the future by direct tax and expelled from office the mayor who opposed the change in plan. The users of electricity and water decided that it was unfair for them to bear the entire municipal expense, and, being a majority, voted to have all citizens share this burden.

An audit of the municipal electric establishment at Carthage, Missouri, in November, showed that in 30 years it had cost the taxpayers $1,001,662.82, and up to the date of the audit showed a book loss of $434,209.19.

Arthur Brisbane and others have proclaimed the Seattle municipal electric department as an outstanding success. *Business Week* for December 23, 1931, published an article headed "Public Ownership Meets More Trouble In Seattle." A part of the article was as follows:

"Harassed by creditors and unable to sell bonds, Seattle's city light department, over which many a political battle has been waged, finds itself with its back to the wall. The utility is on a warrant basis and has been unable to meet the full November installments on machinery and transmission line purchased many months ago. A recent call for offers for bond issues has brought no response."

In recent weeks the Reconstruction Finance Corporation has thrown a straw to the drowning Seattle municipal establishment by approving a part of the loan applied for. There may be some further slight measure of relief in the ruling of the Washington supreme court that municipally owned power plants may wholesale surplus power outside the city limits under certain limitations, which decision was heralded by public ownership advocates as a notable victory.

The Muscatine, Iowa, municipal plant is another celebrated in print through propaganda of the Public Ownership League of America. In 1930 the League's magazine stated that "net profits" of the municipal plant at Muscatine in 1929 was slightly over $20,000 per month, making a total profit of about $240,000. The total sales of the electric plant that year amounted in fact to only $227,000, or $13,000 less than the alleged profits.

Florida also has been much advertised by propagandists for municipal utility success. W. Austin Smith of Jacksonville, a consulting engineer, who managed two municipal electric utilities in Florida after rebuilding them, later a consultant of the Florida League of Municipalities, presented in the *Electrical World* of January 30, 1932 a complete analysis of municipal operation in Jacksonville and six other Florida towns, in which he stated the following conclusions:

1. That only one town showed apparent profit of any magnitude;

2. That street lighting and waterworks pumping costs in municipally served towns are not lower than in cities buying company service;

3. That if the excesses paid by these cities over the national average or the average of towns served by power companies in adjoining states were converted into mills of taxation, it would reveal hidden taxes in the Florida municipal towns of from 2.2 to 18.6 mills for the privilege of operating their own utilities.

Concluding he said that in the face of these findings one should view with suspicion the idea of municipally owned and operated utilities as a means of reducing taxes.

Illinois also rises to be heard. In 1932 it was reported that municipal ownership of electric plants had then been abandoned in 155 Illinois communities, 142 of which changed to service from private plants, 12 purchased electricity from private plants for distribution by the municipality, and one was without service. Since the end of 1924, it was reported, 47 communities had changed from municipal to private sources of power, leaving only 36 towns—2 per cent of those having service in the state—with municipal generating plants.

The mayor of Kewanee, Illinois, attempted to put his city back into the utility business in October last. His project was defeated by 900 majority, and he was denounced in the Kewanee Star-Courier for "dumping $1,000 of city funds unnecessarily into his special election with citizens of his community hungry and unclothed, and city employees *again* facing payless pay days."

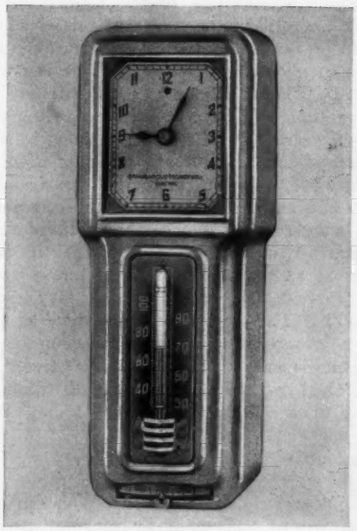
Wagoner's Sad Situation

An entire issue of this magazine would be required to tell adequately the story of Wagoner, Oklahoma. This town bought oil engine equipment for a municipal plant and has been engaged in litigation in both state and federal courts for several years in efforts to extricate itself from resulting conditions which have disrupted the community. The oil engine company is suing the city, the city is suing the engine company and the municipal electric plant is being operated by a federal court receiver in an effort to determine if possible the actual results of operation. The Wagoner story is exceptional only in that most of the difficulties encountered in municipal operation in all other towns that have tried the experiment, seem to have been accumulated and consolidated here. The outcome inevitably will be a return of the utility busi-

BE SURE

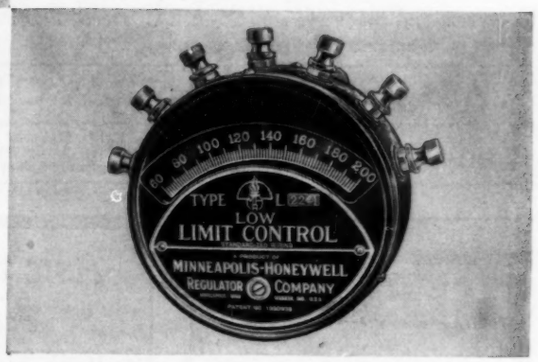
your controls are as good as your burner

•



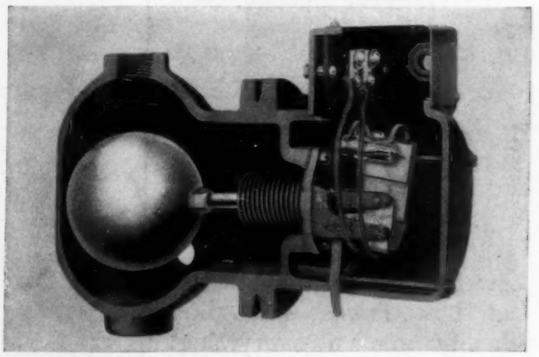
Electric Clock Thermostat ... Automatically reduces and returns temperature setting at predetermined times, causing greater economy and comfort. Entirely electric and requires no attention ...

Low Limit Control ... For steam and hot water systems. Prevents air stratification or "cold 70°" by operating burner enough to keep radiators warmer than room temperature and cause circulation



Low Limit Control ... For warm air systems. Keeps furnace bonnet temperature high enough to cause circulation and prevent chilly floors due to "cold 70°" condition

YOUR burner is only as good as the controls that make it operative .... Only Minneapolis-Honeywell can offer controls that are positive assurance that your burner will *constantly* deliver the performance and efficiency your engineers require .... And —while you are thinking controls—why not make all the profit you can—why not sell a complete control system? It's just as easy—if not easier, when you can prove *all* the advantages .... Minneapolis-Honeywell Regulator Company, 401 East Twenty-eighth Street, Minneapolis, Minnesota. Branch or distributing offices in all principal cities.



Low Water Cutoff ... Positive protection against low water supply for steam or vapor systems. Lowering of float due to low water automatically shuts off burner

MINNEAPOLIS - HONEYWELL

Control Systems

IN THIS MAGNIFICENT MONUMENT OF MERCY
...MADSEN

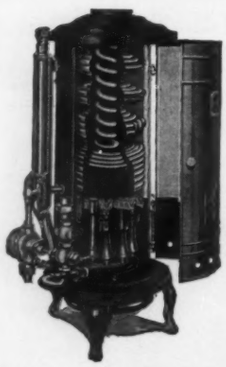
THE largest institution for the care of the acutely ill ever concentrated in a single building is the new Los Angeles County General Hospital. Its 35 acres of floor space will care for 2,444 patients normally and a maximum of 3,600 in an emergency.

In every department will be found the most advanced equipment that modern science has devised. In the kitchens, quite naturally, are 31 sections of Madsen Gas-fired Cuisine Ranges, 10 Madsen Gas-fired Bake Ovens, and three Madsen 36-inch Charcoal Broilers. Again, Madsen has met a most exacting test.

MADSEN IRON WORKS, LTD.

P. O. Box 601, Huntington Park, Calif. (Suburb of Los Angeles)
MADSEN HOTEL AND RESTAURANT KITCHEN EQUIPMENT
Sold by Leading Equipment Dealers

HOFFMAN



Low Prices alone mean little but Low Prices and High Quality mean everything. You can make money with HOFFMAN.

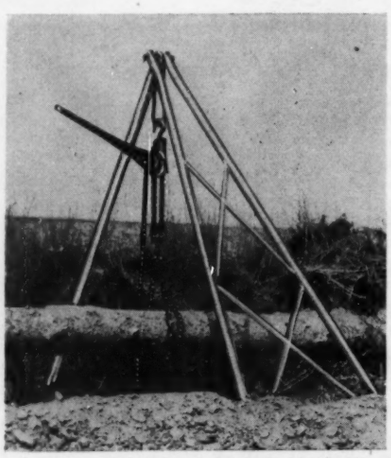
Details on request.

THE HOFFMAN GAS & ELECTRIC HEATER CO.

1701 Dixie Highway
Louisville, Kentucky

Ask the Men Along the Line!

If it's an Adams Jack
It's SAFE and ECONOMICAL



Both Hydraulic and Rachet Jacks
For Every Pipe Line Service

Phone or Write

Adams Mfg. & Engineering Co.
Phone Kimball 3902
2068 Belgrave Ave. Los Angeles

ness to business hands but this may have to be entrusted to a future generation, as prospect of agreement upon any plan by Wagoner citizens of the present generation appears to be hopeless.

Complete figures on the number of municipal electric plants that have shut down or gone out of business in the country as a whole are difficult to secure at this time, as the federal census report covering this subject is made only once in five years. The last was in 1927. The next, as of 1932, already in preparation, will be released late during the present year. The 1927 report showed 1,412 cities and towns, with a total population of about 3,000,000, where municipal electric operation had entirely disappeared, the communities being served from company distributing systems. In addition, 496 municipalities had disposed of their plants because they could buy current more cheaply than they could make it. The aggregate population of this latter group was about 1,500,000. Such statistics mean more as to the trend of municipal ownership than pages of argument based upon isolated instances.

Gas Side of Picture

Unfortunately, there is no governmental report giving corresponding information relative to the gas industry. Efforts to popularize municipal operation of gas properties has been less successful than with the electric side of the utility industry.

While the Public Ownership League has announced that it expects to be more active in the future than in the past in promoting public ownership of gas properties, there is little probability that such agitation ever will bring about results comparable to those resulting heretofore from agitation for municipal ownership of electric utilities.

In Kansas the towns of Parsons, Newton and El Dorado in 1932 rejected proposed bond issues for municipal gas establishments, notwithstanding unprecedented effort on the part of the then governor of Kansas to discredit and defeat the gas company serving these towns.

Certainly there is little encouragement in or from Oklahoma for the proponents of municipal ownership of gas. Oklahoma has 12 municipal ownership gas towns at this time, ranging in population from 168 to 5,931. Only two exceed 3,000 in population. As already stated, in the 12 towns the average rate for the first 5000 cubic feet of gas is 8.3 cents higher than in the 12 company-served towns of nearest population.

The town of Perry, which last November 17 voted $100,000 in bonds for a gas distribution system, by a majority of 23 votes, has had no offers for its bonds, and citizens, including scores who voted for the bonds, have petitioned the city council to cancel the issue, a reduction in rate by the utility company having helped to change the public attitude.

Would Sacrifice Tax Revenue

With all that has been said there is yet to mention the fact that in a time when municipalities and all government agencies are groping and struggling for sources of revenue, the municipal ownership propagandist still is shouting the alleged merits of a

ANNOUNCING

ANOTHER P·G·and E· SERVICE

Free Display Cards For Dealers

This six-color Display Card, mounted in Standard Metal Frame, is an example of the free advertising service now available to dealers within P. G. and E. territory of service.

This new P. G. and E. Service will provide dealers in Northern California with beautifully processed cards, 44 inches high and 28 inches wide, for display purposes on their floors and in their windows. Text of these display cards will tie in with current advertising campaigns on various domestic appliances.

At intervals during the year, new display cards will be distributed to dealers who have one or more of the standard card frames sold by the Gas Appliance Society during its Fall gas heating campaign.

Store owners having these standard card frames will automatically receive this free display card service. Dealers who do not have the frames may purchase them for $3.25 each from the Gas Appliance Society, 180 New Montgomery Street, San Francisco. As the supply is limited, it is advisable to send in your orders without delay.

In addition to the P. G. and E. Cooperative Display Card Service, the Gas Appliance Society plans to furnish dealers with free advertising display cards during the year. Remember: Display cards will be distributed free only to dealers and store owners who have standard card frames.

WG 202-233

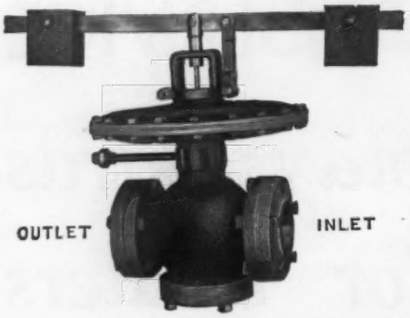
P · G · and E ·

PACIFIC GAS AND ELECTRIC COMPANY

OWNED . OPERATED . MANAGED BY CALIFORNIANS

For District or Individual Service—

The CF Weighted Illuminating Regulator



It is designed to reduce a medium pressure of 15 pounds or less to any given delivery pressure between one ounce and five pounds.

This is but one of the valves described in our catalog. Sent on request.

The Chaplin-Fulton Mfg. Co.

Organized 1884—Oldest Builders of Gas Regulators in the Country. Regulators of all Sizes from 1 inch to 24 inches; for all Service, 1 oz. up to 2,000 lbs. pressure to Square Inch.

28-40 Penn Avenue **Pittsburgh, Pa.**

REPRESENTATIVES

WESTCOTT & GREIS, Inc. Sales and Service — Dallas, Tulsa

JNO. W. CRAWFORD Sales Engineer — 1855 Industrial St., Los Angeles

PARSONS ENGINEERING CO. — Los Angeles, Calif., San Francisco, Calif.

Or Any Jobber

Illustration through courtesy Chicago Daily News

The Great Coating

The illustration above shows application of the NO-OX-ID MASTER COAT to a big gas line. This covering, as a result of exhaustive field and laboratory studies, is in our opinion the greatest of all protective coatings.

It consists of:

(1) DEARBORN PIPE MILL COAT. This coat is to give protection to pipe in transit.

(2) NO-OX-ID "G" SPECIAL, the rust preventive unequaled which combines chemical rust inhibition and mechanical soft non-drying protection.

(3) NO-OX-ID-IZED WRAPPER is supplied in a form complying with the requirements of the job. Applied spirally.

(4) NO-OX-ID SERVICE COAT gives a film effective in resisting soil stress which does not become hard and brittle on aging.

DEARBORN CHEMICAL COMPANY

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807 Mateo Street, Phone TRinity 3385

SAN FRANCISCO
421 Bryant St., Phone SUtter 8688

The NO-OX-ID MASTER COAT

FRASER
GAS APPLIANCES AND FURNACES

Announcing—

Two New Large Capacity

FLOOR FURNACES

No. 135 —50,500 B. T. U. Input
No. 135A—57,000 B. T. U. Input

The Complete Line now includes

7 sizes Floor Furnaces
11 sizes Basement Furnaces
2 sizes Wall Furnaces
5 sizes Pipeless Furnaces
5 sizes Console Heaters
Baked or Porcelain Enamel

Write for our new catalog and price list.

Manufactured by

Fraser Furnace Company
Stockton, Calif.

Distributed by

H. R. BASFORD CO. San Francisco, Los Angeles

plan which would take from the tax rolls of every community its best taxpayers—the utilities. The *New York Sun,* commenting on this phase of the subject said recently:

"Before advocates of public ownership can expect to get anywhere it will be necessary for them to provide a substitute for the enormous public revenue now derived from private operation. The sum of $210,000,000 a year is not to be picked up almost anywhere."

The Sun editorial was inspired by an address by Paul S. Clapp of the Columbia Gas & Electric Corp., analyzing taxes paid by electric utilities in the United States. He stated that the total for 1931 was $210,000,000, of which $50,000,000, or 23.9 per cent went to the federal government. Of the remaining $160,000,000, the companies paid $77,000,000, 36.5 per cent, as municipal taxes; $34,000,000, or 16.3 per cent, as county taxes; $21,000,000, or 10.1 per cent as state taxes; and $28,000,000, or 13.2 per cent, as special taxes of various kinds.

To the question suggested in the heading of this article it is impossible for any person at this time to give a positive answer. The public utility observer will see many reasons for an affirmative reply. The municipal ownership proponent undoubtedly will read the signs as suggesting a negative answer. The less directly interested observer probably would reach the conclusion that business men believe municipal ownership is slipping, while politicians believe the contrary, but that with most in both groups the wish, to some extent, is "father to the thought."

From the foregoing evidence, and any available from other sources, each person interested may write his own answer.

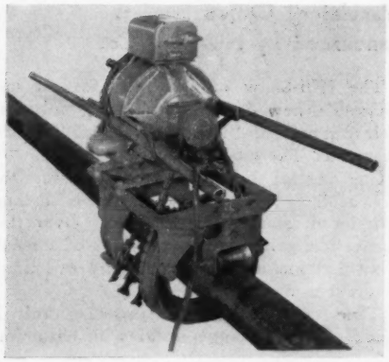
Rotary Pipe Cleaning Machine Introduced by Adams

AN electrically driven machine for removing corrosion and foreign matter from pipe has been introduced by the Adams Manufacturing and Engineering Co. of 2068 Belgrave Avenue, Huntington Park, Calif. This machine is designed for use on both new and old pipe to remove dirt, rust and scale in preparation for treating either above ground or in the trench without disturbing the service.

The machine is a complete unit and includes a motor driven by a gasoline engine generator. The motor is mounted directly above the rotating cleaning machine and is an integral part of it. The rotary frame opens on hinges and is readily placed on the pipe where it is closed and locked. The machine itself is light and rests on two convex rollers that conform to the perimeter of the pipe; as the pipe is cleaned it is moved back and forth along its length. The rotating elements are connected with the motor by a V-shaped belt and a control on the motor permits a reversal of the direction in which these elements revolve around the pipe.

The generator and the engine are built in a two-wheel trailer that also carries the cleaning machine when it is not in service.

For old pipe, the cleaning elements are chains on both sides of which are pointed studs made entirely of hard metal. When the studs on one side become worn, they are



sharpened; and when further worn the chains are reversed. When both sides are worn, the points are renewed by welding on the job. For new pipe, the cleaning elements are steel wire brushes made up in segments that are also renewable on the job.

The standard sized machines are made for any pipe from 4 to 16 inches in diameter.

Southern Counties Ready for Year of Load-Building

SOUTHERN Counties Gas Co. held its annual sales dinner in Los Angeles on the evening of January 16 with 85 in attendance, including officers, executives and sales personnel. F. S. Wade, president and general manager, and F. H. Bivens, vice-president in charge of public relations and sales, participated in the program.

Clyde H. Potter, commercial manager, acted as toastmaster and following the dinner introduced the program by reviewing 1932 new business activities. Pointing out that the company had maintained its sales organization intact, Mr. Potter referred to replacing of obsolete equipment and continuous concentration on modern gas ranges as particularly productive features of the past year's program.

The principal address of the evening was delivered by Dr. F. P. Woellner, University of California at Los Angeles. His subject was "The Mind of the Buying Public."

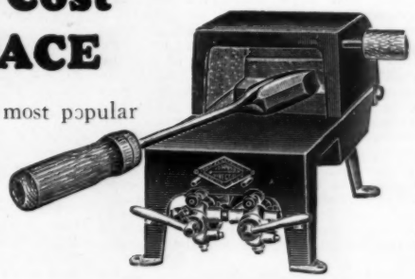
The F. H. Biven's Merchandising Trophy was awarded to the Santa Monica Bay District of which J. C. Gilbert is manager, for most consistent sales during 1932. A dollar sales quota for 1933 has been set for Southern Counties at $400,000, an increase of approximately 10 per cent over 1932, and representing more than a 10 per cent increase in unit sales due to unit price decreases now in effect. The company expects to spend much effort on range sales, Mr. Potter pointing out that recent surveys show approximately 72 per cent of ranges in typical Southern California cities to be more than four years old. Particular stress will be laid upon sale of modern ranges, fully equipped with labor-saving devices including the automatic time clock. Gas refrigeration, and water heating as well as central and space heating will also get a large share of attention in Southern Counties 1933 sales efforts.

Two New Gas Towns in Louisiana

Norco Gas and Fuel Co. has been organized and is serving gas in Norco and Goodhope, La.

Efficient—Low Cost BENCH FURNACE

The Johnson No. 101 is one of the most popular bench furnaces made. Efficiency, moderate cost and dependability have won this enviable position. Designed for heating soldering coppers and heat-treating carbon-steel parts.



JOHNSON NO. 8 TORCH and MELTING POT

The burner of this handy little outfit is adjustable to any angle or can be removed and used as an efficient hand torch. A practical unit for every shop that needs a small melting pot or a powerful gas torch. Write for details.

JOHNSON GAS APPLIANCE CO.
Cedar Rapids IOWA

Pacific Coast Representative—C. B. BABCOCK CO.
135 Bluxome St., San Francisco, Calif.

OVER 10,000,000
have gone down to STAY!

The *permanent dependability* of Paranite Pipe Joint and Leak Clamp Gaskets has been indisputably established as a matter of record—in every type of gas line service—for the past 20 years. Paranite Gaskets are the most permanent gaskets known today.

It's Safest to Specify Paranite
The Manhattan Rubber Mfg. Division
of Raybestos-Manhattan, Inc.
Executive Offices and Factories,
Passaic, New Jersey

If you would keep in touch with the Natural Gas and Butane industries, send a check for $2.00 to

WESTERN GAS
124 West Fourth Street, Los Angeles

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Company.....
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Subscription Rates: I Year $2.00; 3 years $5.00; Foreign $3.00 per year.

GAS BROODERS

The new type Hart Radiant Gas Brooders are causing a sensation amongst poultrymen. They are proving by far the best means of brooding chicks. Increase your sales of gas by handling this leading line. Hart Gas Brooders will raise a greater percentage of chicks with less labor and expense than any other method. All brooders thermostatically controlled—hang from ceiling—teach chicks to perch—gas pipe runs overhead with flexible gas tubing running to brooder. Get your share of the vast potential fuel load for brooding of chicks and turkeys. One poultryman is worth a dozen ordinary household gas consumers.

Send at once for descriptive literature, discounts, etc.

Flashlight photograph of chicks sleeping under a Hart Gas Brooder at the world's largest poultry ranch where Hart Brooders are used exclusively. One hundred and forty-four brooders in operation the year round brooding five hundred to one thousand chicks to the brooder.

H. W. HART MFG. CO., P. O. Box 404 W, Santa Monica, Calif.

More Hart Gas Brooders are being sold on the Pacific Coast than any other make.

The Goodman Stopper

The Reliable Shut-off for Street Mains

Equipped with Improved Patented Locking Sleeve, which locks both handles to the pipe. Stopper cannot slip. Gas cannot pass.

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, N. Y.

Pac. Coast Rep.: C. B. Babcock Co.
135 Bluxome Street
San Francisco, California

The PARK WILSHIRE HOTEL APARTMENTS

Most desirably situated on Wilshire Boulevard, adjoining beautiful Westlake Park---15 minutes from the city center. By bus directly in front of the building and by three car lines within one block.

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Apartments from $75 a Month
Also Daily and Weekly Rates

•

2424 Wilshire Blvd., at Westlake Park

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Modern, Home-like and Supremely Comfortable

LOS ANGELES

"Vaculator" Coffee Brewers Announced by Hill-Shaw Co.

The Hill-Shaw of Chicago has just announced a new line of gas heating units for their commercial "Vaculator" coffee-brewers, known as Thermo-Gas heating units.

One central burner is required for the six-Vaculator size. This burner is a long cylinder of small circumference. Over this burner is a grill consisting of bars of a metal alloy that has a heat conductivity five times as great as that of steel.

The frame of the Thermo-Gas unit is made of heavy gauge metal with chromium

plating. All joints are electrically welded. The bars of the grill are removable so they can be readily cleaned. A heavy metal bead along the top of the frame gives strength and rigidity.

The No. 6 Vaculator is illustrated herewith.

The Hill-Shaw Co. also makes a full line of Vaculator coffee brewers for domestic use.

Getting Ready to Extend Service to Suburbs of Victoria, B. C.

Orders for 20 miles of distribution pipe have been placed by British Columbia Electric Power and Gas Co., Ltd., Vancouver, B. C., to be used in extending service to Oak Bay, Saanich and Esquimalt, suburban to Victoria, B. C. The gas will be served under high pressure. Cost of the development is estimated at $100,000.

Western United G. & E. Applies to Introduce Natural Gas

Western United Gas & Electric Co., Aurora, Ill., has applied for permission to serve natural gas in its system in McHenry, De Kalb, Cook, Kendall, Kane and Will counties.

Municipal Tax Fails to Pass

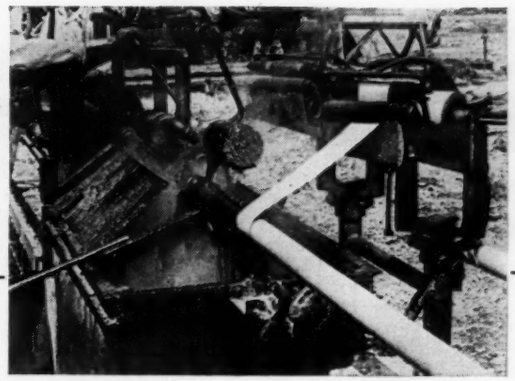
The recently proposed 3 per cent municipal tax upon gross revenues of Portland Gas and Coke Co. and Portland General Electric Co., introduced in the guise of an unemployment relief measure, has failed of passage.

Marine Hospital on "Natural"

United States Marine Hospital, New Orleans, was recently put on gas service, the four 150 h.p. boilers being changed over, making the fifth major hospital in that city to use gas fuel exclusively.

"Enamel coatings without shield or protection reduced anticipated average pitting 50% or less . . . the fabric reinforcement reduces anticipated average pitting by 80% or more."

—*from report of* DR. GORDON H. SCOTT
A.P.I. Research Associate at the U. S. Bureau of Standards



Feeding pipe into a Carroll Yard Machine, a stationary machine for coating and wrapping pipe from ½" to 6" nominal diameter.

For lasting protection against Corrosion...WRAP!

EXPOSED to the distorting and abrading effect of the soil, pipe coating alone gives only partial protection. It fails mechanically, moisture enters, corrosion starts. For sustained protection—coat the pipe, then reinforce or shield the coating against soil stress.

J-M Asbestos Pipe Line Felts

Inorganic—immune to soil chemicals—offering lasting security against soil stress, J-M Asbestos Pipe Line Felts have behind them a history of more than 20 years' successful use.

For better application, at much lower cost, we can furnish the Field Machine, for wrapping *in or over* the ditch; the Saddle Machine, for wrapping *alongside* the ditch; and the Carroll Yard Machine, for wrapping in a pipe yard.

Wrapping pipe in the ditch. (The Ditch Wrapping Machine is a recent Johns-Manville development.)

Write for the booklet, "Safeguarding Your Pipe Line Investment." Address our local office or Johns-Manville, 292 Madison Avenue, New York City.

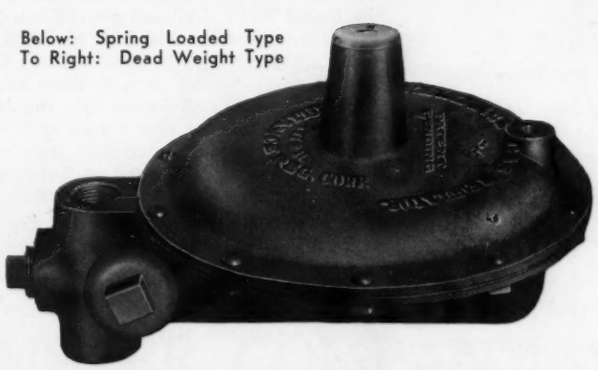
Johns-Manville

ASBESTOS FELT AND FABRIC

RELIANCE

REGULATORS

Below: Spring Loaded Type
To Right: Dead Weight Type



...Maintain Uniform Pressure for Manufactured, Natural and Butane Air Gases

Detailed Information on Request

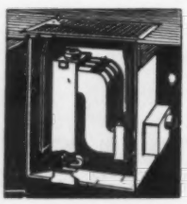
RELIANCE REGULATOR CORPORATION

1000 MERIDIAN AVE., ALHAMBRA, CALIF.

Manufacturers of Gas Regulators for All Purposes

PAYNE

THIS NAME ELIMINATES SPECULATION



Floor Furnaces,
Basement
Furnaces
Console Heaters
—they make
friends for GAS.

We have been able to assist many gas companies in their merchandising of heating equipment. We have done this in a manner which has created consumer satisfaction and friendly relations for all concerned,—AT A PROFIT.

We ask the opportunity of cooperating with you.

Payne Furnace & Supply Co.
Since 1914
Beverly Hills, Calif.

"Empty the Holder" Campaign at St. Louis

(Continued from Page 11)

vision, which had been leading throughout the campaign, and won the Harley L. Clarke Trophy—a silver plaque 18x24 inches in size, which had been hung up as a prize. A photo of the trophy is reproduced with this article. A photograph of the scoring display is also reproduced.

While many of the 3,177 prospects turned in by employees were quickly determined to be curiosity seekers or unable to afford the extra cost of gas heating comfort and convenience, the sales department still has hundreds of these prospects which will eventuate into sales and gas contracts. In fact, not a day goes by but one or more of these prospects are closed.

The cash prizes were won by L. A. Brand, J. H. Evers, Martin Carey and W. H. Lloyd.

In the latter part of the campaign the employees were given the privilege of actually closing contracts themselves if they so desired. No pressure was applied to get them to do so, but several of them did avail themselves of the opportunity and closed one or more contracts for which they were given an extra $5, or $10 altogether, for a completed sale and installation created and finished by the employee.

One of the interesting "side shows" of the campaign was the development of the order of G. H. E.'s, *Gas Holder Emptiers.* Any employee who secured 10 prospects automatically became a member of this order. Twenty prospects made him a second-degree member; 30 prospects made him a third-degree member, and so on. At the close of the campaign 77 of the employees had made themselves G. H. E.'s—and there was one five-degree member, and several four-degree members and numerous second- and third-degree members.

The interest in the campaign both inside and outside the organization was remarkable. It seemed to an outsider that everyone was talking "gas house heating" and for the two months of the effort all St. Louis was gas heating conscious.

The success of the campaign was such that the company is encouraged to believe that in more prosperous times a much greater amount of business will result from such an effort.

2 plates IT'S NEW

THE BJ DUPLEX ORIFICE FITTING

Ask For Folder

BYRON JACKSON CO.
P. O. Box 1307, Arcade Station
LOS ANGELES, CALIF.

Oklahoma City Gas Co. To Build Mains if Granted Franchise

Contracts are reported to have been signed for construction of gas mains in Oklahoma City to cost approximately $800,000 by the Oklahoma City Gas Co., recently organized in that city. The construction work depends on whether or not the company is granted a franchise there, the application now pending. An election will need to be called to vote upon the issue.

Ryan Takes Over Duties of Wm. H. Barton With Montana Power

John C. Ryan, vice-president of the Montana Power Co., Butte, Mont., has taken up the work heretofore carried on by William H. Barton. Mr. Barton was manager of the gas department until his death on December 26.

L. A. G. and E. Appeal on Supreme Court Docket

The appeal of the Los Angeles Gas and Electric Corp. protesting against a 9 per cent decrease in rates was set for February 6 on the United States Supreme Court calendar. The California Railroad Commission and the City of Los Angeles filed separate briefs supporting the reduction.

H. D. Harper, American Meter Co. Executive from 1895-1926, Dies

Hartley D. Harper died suddenly in his home in Pasadena, Calif., December 11, 1932, in his 76th year. Born in New York State in 1857, he moved to the Middle West in the early 80's and was engaged by the late William McDonald as western representative of D. McDonald & Co. in 1886. He became manager for the American Meter Co. in 1895. He retired from active service in 1926 and established his residence in Pasadena.

Cooper-Bessemer Corp. Now Celebrating Its Centenary

The Cooper-Bessemer Corporation of Mt. Vernon, Ohio, one of the oldest builders in the United States of oil and gas engines, celebrates its centenary with the beginning of 1933. Two brothers, Charles and Elias Cooper, built a small iron foundry at Mt. Vernon in 1833, and thereby laid the foundation for a business now valued at $8,000,000. By the turn of the century, the Cooper company was widely noted as builders of high-powered steam engines and at that time it began to turn to the new natural gas and petroleum industries. The Cooper and the Bessemer Gas Engine Company had so paralleled their activities in 1929 that the former made a purchase of the latter and the present corporation was organized.

New Rate Schedule for Billings Gas Co. Authorized

The Montana Public Service Commission on January 11 approved the new rate schedule for natural gas service set up by the Billings Gas Co. covering service in Billings, Bridger, Fromberg, Laurel, Silesia, Edgar Park City and Joliet, Mont.

The new rates call for a charge of 32 cents per M c.f. for the first 1,000 M c.f.; 24 cents for the next 1,000 M c.f.; 20 cents per M c.f. for the next 1,000 M c.f. and 13½ cents per M c.f. for all over 5,000 M c.f.

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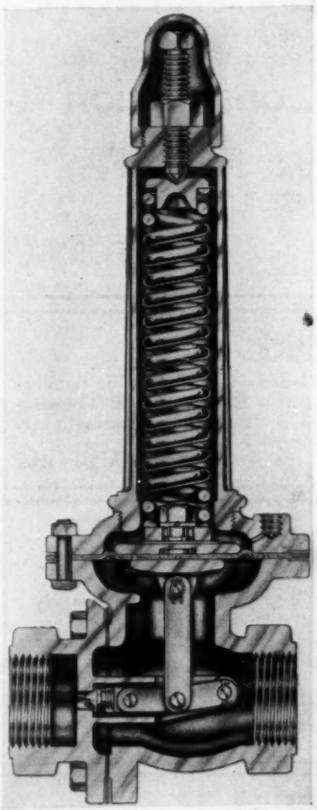

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Adams Mfg. & Engineering Co. 40
American Cast Iron Pipe Company 3
American Gas Products Corp. 35
American Meter Company 6
American Recording Chart Co. ..... —

H. R. Basford Co. 42
The Bristol Company ..... —
A. M. Byers Company 2
Byron Jackson Co. 46

The Cast Iron Pipe Research Ass'n. ..... —
The Chaplin-Fulton Mfg. Company 42

Dayton Pipe Coupling Co. ..... *Back Cover*
Dearborn Chemical Co. 42
Detroit-Michigan Stove Company ..... —
S. R. Dresser Manufacturing Co. 1

Electrolux Refrigerator Sales, Inc. 37

Fisher Governor Co. ..... —
The Fluor Corporation, Ltd. ..... —
Fraser Furnace Company 42

Groble Gas Regulator Company 31

H. W. Hart Mfg. Co. 44
The Hoffman Gas & Electric Heater Co. 40

Johns-Manville Corp. 45
Johnson Gas Appliance Co. 43

Kerotest Company 32

Madsen Iron Works, Ltd. 40
Manhattan Rubber Mfg. 43
Milwaukee Gas Specialty Co. ..... —
Minneapolis-Honeywell Regulator Co. 39

Pacific Coast Gas Association 29
Pacific Gas & Electric Co. 41
The Park Wilshire 44
Payne Furnace & Supply Co. 46
Pressed Steel Tank Co. 31

Reliance Regulator Corp. 45
Republic Steel Corp. ..... *Second Cover*
Reynolds Gas Regulator Company 46
Roberts-Gordon Appliance Corp. ..... —
Robertshaw Thermostat Company ..... *Front Cover*

Safety Gas Main Stopper Company 44
Wm. B. Scaife & Sons Co. 33
South Chester Tube Co. 4
The Sprague Meter Co. 47
Standard Gas Equipment Corp. ..... —

U. S. Cast Iron Pipe & Foundry Co. 38

Welsbach Co. ..... —
Western Gas ..... *Third Cover*

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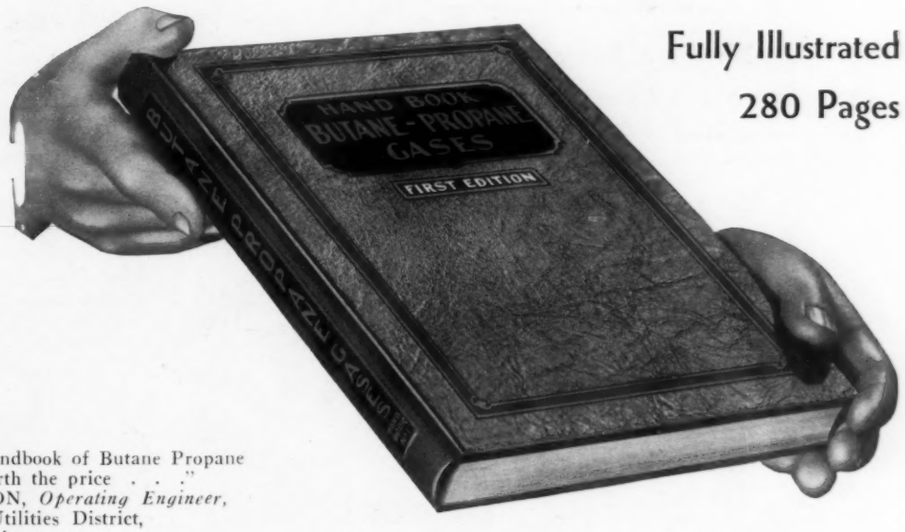

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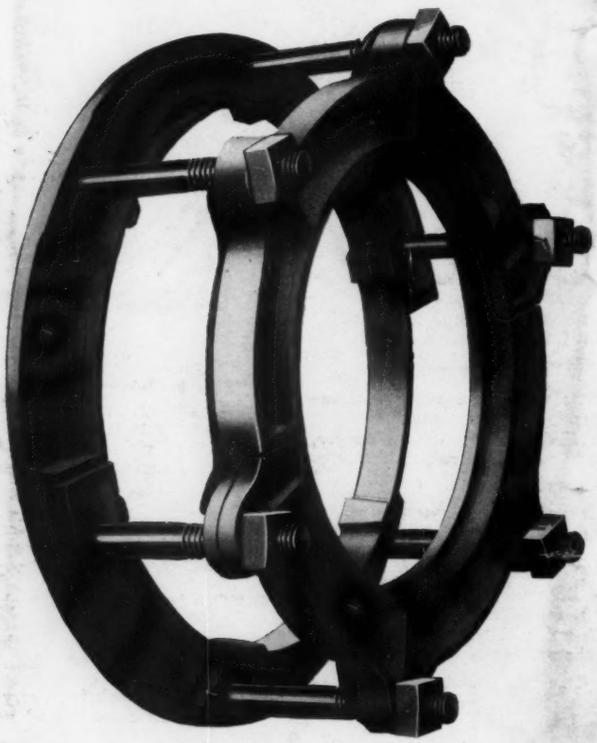

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